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COMPUTERWORLD®

Sherry Aaholm, executive vice president of FedEx Services, says that having broader exposure makes employees more valuable.

Job Swapping FOR Fun AND Profit

Here's an IT job rotation program that really delivers. PAGE 34

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SEPTEMBER 10, 2007
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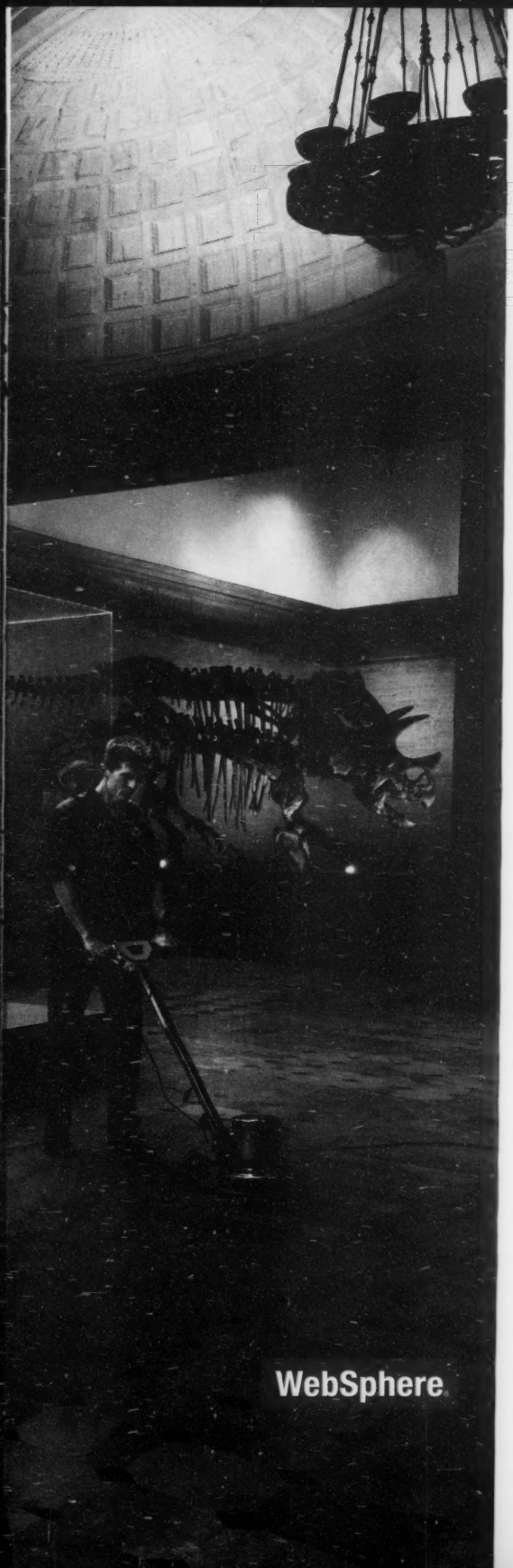

_INFRASTRUCTURE LOG

_DAY 79: This is out of control! Our IT environment is rigid and inflexible. Our business needs are changing, but our environment isn't built to change with them. We can't adapt. Oh, no...I was afraid of this. We're so rigid we're stuck in time.

_*Infrastructurus prehistoricus.* I've read about this.

_DAY 80: I'm taking back control with IBM SOA solutions. Now we can align business goals with our IT. We have the hardware, software and services we need to respond to change. Strategy, planning and implementation are in tune with our specific business needs. Now we can deploy and update business processes faster and more efficiently.

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Inside

COMPUTERWORLD ■ SEPTEMBER 10, 2007

BURT PITTMAN

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ASSOCIATED PRESS/PAUL SAKUMA

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40 Everything Must Stay!

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44 Videoconferencing That Works. Finally!

Telepresence is a video collaboration technology that delivers high-definition video images, stereophonic sound and amazing realism. Though complicated and expensive, it represents a vast improvement over earlier technology. And did we mention that it's really cool?

50 Desktop Power Play

What if your desktop computer could run 100 times faster than a single-core desktop PC and was simple enough for a high school student to program? That's not an idle question. The prototype is here.

52 Lies, Damn Lies And Paid Polling

Vendor surveys tend to highlight problems that their products address. That doesn't mean they can't be useful, but let the reader beware.

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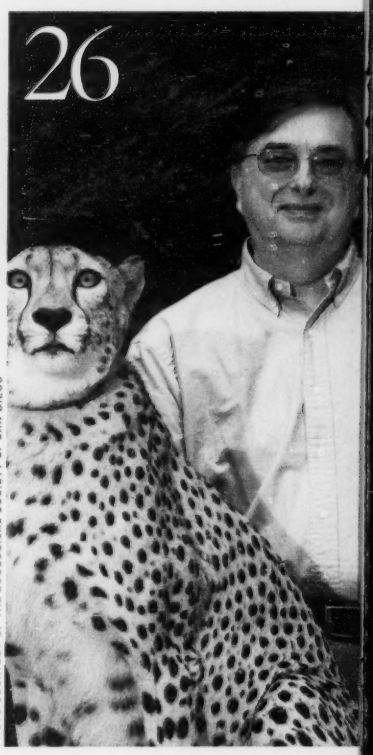

PHOTO COURTESY OF THE ZOOLOGICAL SOCIETY OF SAN DIEGO

26 The Grill: San Diego Zoo CTO **Robert Erhardt** (above) talks about saving species from extinction, developing a worldwide medical database for animals and tracking condors with RFID.

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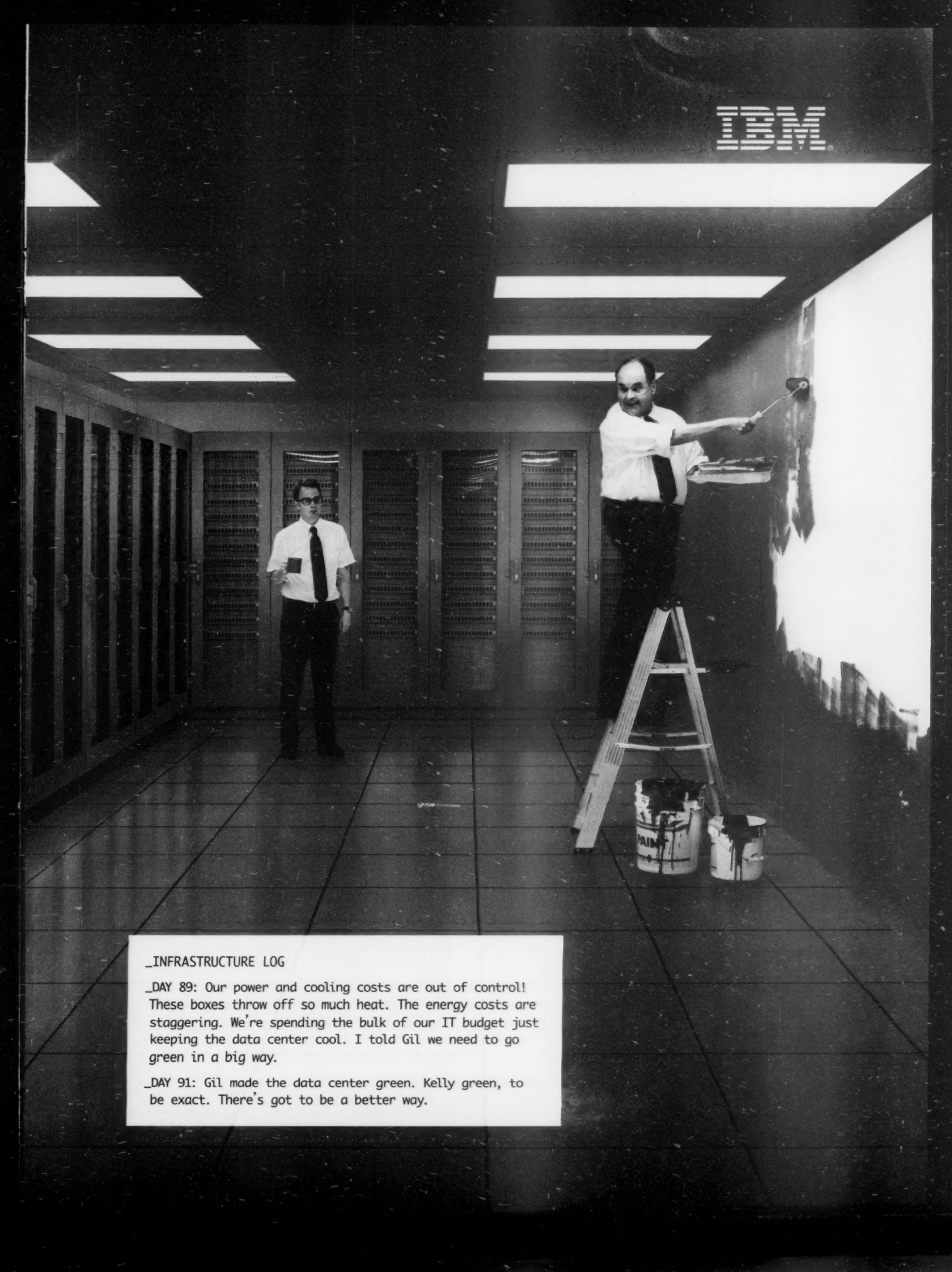

_INFRASTRUCTURE LOG

_DAY 89: Our power and cooling costs are out of control! These boxes throw off so much heat. The energy costs are staggering. We're spending the bulk of our IT budget just keeping the data center cool. I told Gil we need to go green in a big way.

_DAY 91: Gil made the data center green. Kelly green, to be exact. There's got to be a better way.

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This Week Online

The Eight Most Dangerous Consumer Technologies

Consumer devices and services pose threats to corporate security and infrastructure stability. And that has led some companies to respond by doing everything from banning or blocking popular technologies to monitoring employee activities with tracking software.
computerworld.com/storage

Moving From Windows to Linux? Take the Good Stuff With You

Bring your documents, bookmarks, preferences and system settings along when you switch from Windows to Linux. Also, tips on how to choose replacement applications. computerworld.com/software

Battle of the Free Server Virtualization Tools

Our reviewer matches up VMware Server against Microsoft Virtual Server 2005 R2. Which has the features you'll need most?
computerworld.com/servers

Study Shows IT Employees Need Help Handling Stress

A Canadian graduate school study suggests that companies should start investing in IT-specific employee-assistance programs and offer more peer support for technology professionals.
computerworld.com/careers

Blog Spotlight

Fake Degrees, Real Résumés

Recent stories have exposed South Koreans who exaggerated or lied about their academic backgrounds. But we don't need to look beyond our own borders to find examples of fake credentials appearing on real résumés, blogs Ian Lamont.
computerworld.com/blogs/node/6132

Learn How the Organization Operates

The IT department makes the rules; the rest of the company breaks them. John Monaghan responds to Frank Hayes' Sept. 3 column, "Rewiring Respect," by suggesting that the wall between the help desk and the rest of the corporate world needs to come down if communication and understanding are to improve.
computerworld.com/blogs/node/6140

Banning Facebook, Similar Sites at Work May Not Be a Good Idea

Instead, a British trade-union association says, it's much better to cut employees some slack and focus on setting up formal policies for acceptable use of such sites.
computerworld.com/security

Opinion: What's Wrong With Mac OS X?

InfoWorld's Oliver Rist loves his Mac, but he says it falls short of workplace requirements because it lacks mission-critical, vertical business software.
computerworld.com/mac

SHARK BAIT BETA

Don't You Know How Important I Am?

No matter how low on the totem pole the IT guy is, when an uppity manager has a computer problem, there's a dramatic power shift. One help desk technician saw an opportunity to remind a boss of his place.
http://sharkbait.computerworld.com/?q=node/1612

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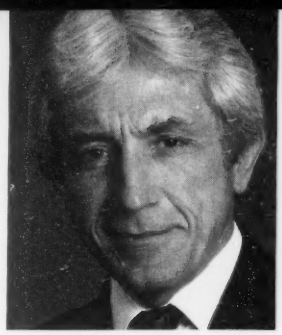
■ EDITOR'S NOTE

Don Tennant

Sacrifice



I'VE OFTEN said that what I love most about my job is the opportunity to associate with IT professionals. Steadfast perseverance and boundless optimism — characteristics I hold dear — exist in many other pursuits, I know. It's just that in my own experience, I've never witnessed the embodiment of those traits as consistently as I have among the people in IT.

Yet there's another trait that I admire even more. Let's call it a preference that the general well-being be advanced ahead of our personal well-being. It's a sublime quality that involves a readiness to do something not all of us are prepared to do: sacrifice for the greater good. Perhaps we stand ready to sacrifice for our families, or even for our friends. But how many of us stand ready to sacrifice for, say, our country?

I'm not talking about driving a hybrid car or using fewer plastic bags, as commendable as those measures are. I'm talking about genuine sacrifice. I'm talking about accepting hardship. I'm talking about the life choices of people like Col. Charles Lambert, project manager of the U.S. Army's Logistics Modernization Program, or Col. Steven Spano, director of communications and information for the headquarters of the U.S. Air Force in Europe. These IT leaders encounter all the professional challenges their civilian peers encounter. On top of those, however, they and their families constantly live under the specter of separation and the call to serve in harm's way.

That spirit of selfless service — of genuine sacrifice — is a powerful, illuminating force. How might it be replicated so that it's more pervasive in the IT profession?

The answer lies in a cause that's presented intelligently and convincingly in the cover story of the Sept. 10 issue of *Time* magazine: "The Case for National Service."

The author, Richard Stengal, brilliantly encapsulates the merits of a national service program and provides practical guidance for the adoption of such a program.

■ That spirit of selfless service – of genuine sacrifice – is a powerful, illuminating force.

"It is the simple but compelling idea," Stengal writes, "that devoting a year or more to national service, whether military or civilian, should become a countrywide rite of passage, the common expectation and widespread experience of virtually every young American." It would be voluntary, not compulsory, since "requiring service drains the gift of its virtue." Yet it would be institutionalized, with innovative, skin-in-the-game advances like creating a National Service Academy akin to the military academies, as well as a Cabinet-level Department of National Service.

The *Time* article also provides insight into existing programs that might ultimately be wrapped into a national service plan. I was especially intrigued by Shelly Jain, a 22-year-old George Washington University graduate from Houston. Jain postponed law school to join an outfit called Teach for America, and she's teaching sixth-grade math in the Bronx. How many more homegrown IT resources might we have if an army of Jains swept into our schools to teach math and science?

Imagine, moreover, how the IT sector's expertise in disaster recovery and business continuity might be tapped in a new Rapid-Response Reserve Corps that would be deployed in the event of a natural or man-made disaster. Remember the remarkable way so many volunteers from the IT community responded six years ago this week to the attacks on the World Trade Center and the Pentagon? Think how much more productive those efforts might have been if they had been part of a coordinated reservist response.

With the point made, allow me to mention one other related development. My third grandchild, Benjamin, was born on Aug. 4 to my son Don and his wife, Jenna. My son hasn't been able to hold his son yet, because Don's a naval officer currently deployed in the Persian Gulf. If you have kids, you know the sacrifice that he and Jenna are making. The next time you bump into a military family, please go out of your way to thank them. ■

Don Tennant *is editor in chief of* Computerworld. *Contact him at don_tennant@computerworld.com.*

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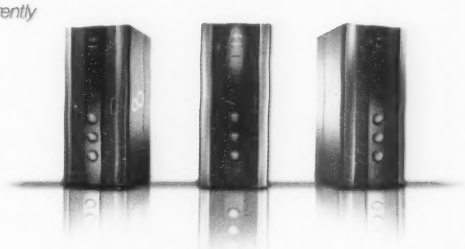

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■ LETTERS

Wary of Malware? Just Disconnect

One thing I've noticed in reading various lists of malware prevention tips is that nobody ever mentions disconnecting your computer from the Web as a good solution ["How Do I Tell if My Computer Is a Zombie?" *Computerworld.com*, July 24]. Even if you don't want to turn your computer off because you don't want to wait for the reboot, you can just disable the connection. Nothing will come from the Web or go out. When you're ready to reconnect, just restart your network connection. A desktop icon makes this even easier. Really, why make it easy on the bots? Don't give them a path to transmit, at least when you're not around to notice.

■ **Fred Sheeman,** *Columbus, Ohio*

Goodbye, Windows

Scot Finnie wrote a very well-reasoned article that covered a number of interesting points ["Ding! Mac vs. PC Cost Analysis, Round II," *Computerworld.com*, Aug. 9]. One is the stranglehold Microsoft has on computer users with its Office suite. Word and Excel are the foundation that keeps Microsoft dominant.

It will be interesting to see what will happen when the open-standard XML format in Word becomes more prevalent. Once Microsoft loses the advantage of a proprietary format, there will be less reason to stick with Word and Excel and less reason to stick with Microsoft.

■ **Gregg Dudash,** *Chicago*

NYC Taxis Will Get Far More Than GPS

Just to clarify, here's what's included in the technology upgrade that may lead some New York taxi drivers to strike: credit/debit card acceptance tools, passenger monitors, interactive electronic maps, electronic trip sheets (no more crucial data collected by pencils and clipboards!), two-way text messaging systems, and entertainment and music systems ["New York Cabbies May Go On Strike Over GPS Plan," News, Aug. 6].

GPS is only the smallest component of these systems, which were required in a vote that took place — with the industry's support — in March 2004 in return for a historic 26% fare increase. The industry agreed at the time that something would have to be given back to the public in the way of customer service enhancement.

Today, the vast majority of the industry remains excited about the systems, which are currently in almost 1,000 of the city's cabs, with more of them quickly being added every day. The exception is one small affiliation of drivers who continue to spread misinformation about the system's uses.

■ **Allan J. Fromberg,** *deputy commissioner, public affairs, New York City Taxi and Limousine Commission*

Fan of a Single Button

Ken Mingis, in his recent article about the new iMacs ["Hands On: New iMacs' Form, Function a 'Fabulous Combo,' " *Computerworld.com*, Aug. 15] made a disparaging remark about Apple's one-button mouse. I imagine that, as a techie, he would prefer one with five or more buttons. However, my hands have been paralyzed for 45 years. Back in 1986 when all the techies were saying that mice were for toy computers, I discovered Apple's one-button mouse and soon got very productive doing graphics, PowerPoint presentations, Excel spreadsheets and database development and, finally, self-publishing my novels.

When I was forced to use PCs at work, the two-button mouse was a bane to my existence. Even with the best PC mouse, I still often hit both buttons at the same time, and I was continually plagued by right-button pop-ups while trying to do my work.

■ **Ronald W. Hull,** *author, Houston, ron@ronhullauthor.com*

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News Digest

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THE WEEK AHEAD

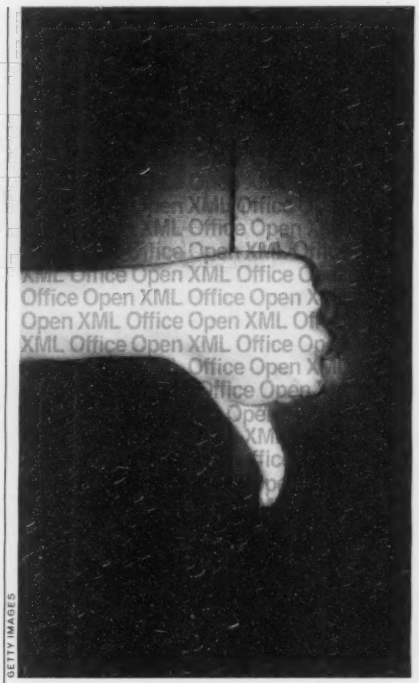
MONDAY: *Computerworld*'s three-day Infrastructure Management World conference will kick off in Scottsdale, Ariz.

MONDAY: Advanced Micro Devices will formally launch its first quad-core Opteron server processors in San Francisco.

TUESDAY: VMware will open its VMworld 2007 user conference in San Francisco. Sun Microsystems will host developers at Sun Tech Days Boston. And the Green Technology World Conference will get under way in Los Angeles.

SOFTWARE

Microsoft Falls Short On Open XML Standard Bid



GETTY IMAGES

MICROSOFT Corp. failed in its attempt to win fast-track ISO standard status for its Office Open XML document format, getting a majority of the votes that were cast but not enough to meet the requirements for approval.

The Open XML proposal must now be revised to take into account negative comments that were made during the voting process, which was completed by the Geneva-based ISO standards body on Sept. 2.

Microsoft said it expects the standards bid to succeed in a second vote early next year. But that is by no means certain, given the objections raised by some national standards bodies.

For example, the French Association for Standardization, known as Afnor, wants to tear the proposal into two pieces. That would create a "core" part, which Afnor hopes will be converged over a three-year period with the competing Open Document Format (ODF) for Office Applications, and an "extensions" section dealing with compatibility between Open XML and proprietary file formats.

Brazil's standards body cited more than 60 objections, including problems with Open XML's support for different languages and date formats. India's ISO representatives raised concerns about the format's incompatibility with ODF, which has already been ratified as an ISO standard.

To be approved, submissions must be supported by three quarters of all ISO members that vote and two-thirds of the national standards bodies that work on a specific proposal. ISO said Open XML failed on both counts, getting "yes" votes from 74% of the former group and 53% of the so-called participating members.

The defeat came amidst claims by some Open XML opponents that Microsoft had taken advantage of loopholes in ISO's rules to encourage more national standards bodies to become full members of the committee working on the proposal. The number of members has increased from 30 to 41 over the past six months.

"Have we been speaking to our community about this issue? Yes, we have," said Tom Robertson, Microsoft's general manager of standards and interoperability. "[But] there is no basis to allegations that we are gerrymandering the process."

— Peter Sayer of the IDG News Service, and Computerworld*'s Eric Lai*

SECURITY

IT Manager Convicted Of Hacking Ex-Employer

A FORMER technical services manager at the Council of Community Clinics in San Diego faces up to 10 years in prison after being convicted in federal court of hacking into the nonprofit organization's computers and sabotaging patient data.

Jon Paul Oson could also be fined up to $500,000 at his sentencing in November, the FBI said.

Oson was arrested in August 2006 on charges of damaging computers belonging to the organization, which provides services to 17 health clinics.

Oson accessed the computers two months after resigning because of what he perceived to be a negative performance evaluation, the FBI said.

He was accused of deleting software and data, including bills, appointment schedules, case histories, diagnoses and treatment plans.

– JAIKUMAR VIJAYAN

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PRIVACY

Pfizer Breach Exposes Data on 34,000 People

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PFIZER INC. last week confirmed that the personal data of as many as 34,000 people may have been illegally accessed and downloaded from a company computer system by a former employee.

The compromised information includes names, Social Security numbers, dates of birth, phone numbers, and bank and credit card information of employees, former employees and health care workers, the New York-based drug maker said.

A spokeswoman for Pfizer said the incident, discovered on July 10, occurred sometime late last year.

The pharmaceutical company began notifying people by mail of the breach on Aug. 24 — more than six weeks after it learned of the incident.

In the letter, Pfizer said that "the number of affected individuals is still an estimate" because outside consultants are continuing to analyze the exposed data.

The spokeswoman would not disclose where the breach occurred or how the company discovered it. Nor would she disclose why Pfizer waited more than a month to inform people that their personal data may have been exposed.

She did say that so far the compromised information doesn't appear to have been misused.

This is the third time this summer that Pfizer has disclosed a breach in which confidential data was exposed.

In June, the company reported that a Pfizer employee had installed unauthorized file-sharing software on a company laptop, exposing personal data belonging to about 17,000 current and former employees.

That announcement also came about six weeks after the drug maker learned of the breach.

A month later, the company reported that two laptops containing confidential employee data as well as proprietary company information were stolen out of the locked car of an employee working for Axia, a contractor for Pfizer.

— By Jaikumar Vijayan

Short Takes

- Network Appliance Inc. has filed a lawsuit charging that Sun Microsystems Inc.'s ZFS file system technology infringes on seven NetApp patents pertaining to data processing systems and related software. Sun denied the charges.
- Gateway Inc. has agreed to sell its professional business unit to MPC Corp. for $90 million. Plans to sell the unit, which targets midsize organizations, were disclosed when Acer Inc. agreed to buy Gateway for $710 million.
- The U.S. Department of Justice has asked the Federal Communications Commission not to impose Net neutrality regulations on broadband providers. The DOJ said such rules could "inefficiently skew investment, delay innovation and diminish consumer welfare."
- Cognos Inc., a maker of business intelligence software, has agreed to purchase Applix Inc., a developer of performance analysis tools, for $339 million in cash.

EBay Auction Yields Drive Holding Political Data

BILL RIES-KNIGHT turned to eBay Inc.'s auction site to buy what he thought was a brand-new PC hard drive.

When it arrived at his home, however, the Stockton, Calif., resident found a used drive that contained proprietary data of the Democratic Party of Arkansas – including the cell phone numbers of Democrats in the state's congressional delegation.

None of the information was encrypted, said Ries-Knight, and only a fraction was password-protected.

In a telephone interview, Ries-Knight, a computer technician, said that although he didn't look at all the files, he did find the private cell phone numbers of Sens. Blanche Lincoln and Mark Pryor, and Reps. Marion Berry, Mike Ross and Vic Snyder.

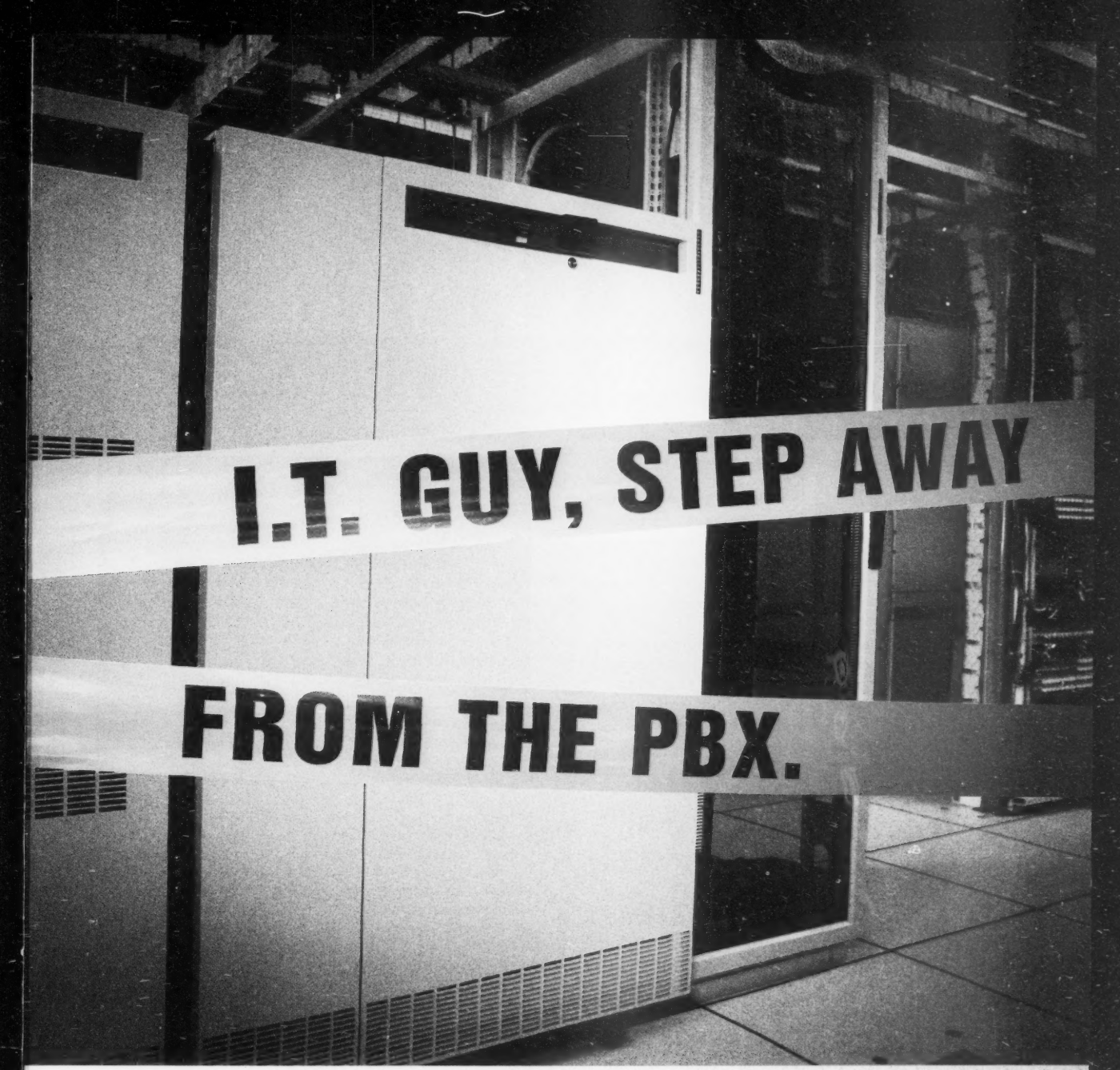
Ries-Knight said the drive came from an apparently damaged computer once owned by Bruce Sinclair, state director of the Arkansas Democratic Party.

He also said that the drive had been listed on eBay by the wife of David Qualls, a friend of a state Democratic Party official and a lead programmer/analyst for the Arkansas state government. Qualls told Ries-Knight that his wife thought the drive was new.

Sinclair and Qualls declined to comment.

"Cases like this probably happen more than we hear about, but I think it's sporadic," said Pete Lindstrom, an analyst at Burton Group in Midvale, Utah.

– LINDA ROSENCRANCE



Some things are better left alone.

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Apple Stirs Hornet's Nest With iPhone Price Cut

IT MANAGERS might find more end users carrying iPhones and asking that they be supported, now that Apple Inc. has unexpectedly slashed the price of the 8GB model of its two-month-old mobile device by 33%.

But while the price cut from $599 to $399 might spur more sales to users who didn't want to pay the original cost, it stunned many of the people who had waited in long lines to buy the iPhone when it was released in late June.

They responded by becoming the online equivalent of an angry mob armed with pitchforks and torches. After Apple CEO Steve Jobs (pictured above) dropped the price-cut bomb on Wednesday during an announcement of new iPod music players, iPhone users flooded the company's support forums with complaints and accusations of betrayal.

For example, peeved customers started discussion threads with titles such as "Demand Reparations!" and "Time for an iWar Against Apple." One user wrote: "I feel like I participated in a beta test of the iPhone . . . and I paid to do it."

On Thursday, Jobs issued an open letter in which he defended the price cut and said that buying a product before a lower price goes into effect "is life in the technology lane." But he also tried to make amends by promising that Apple would issue $100 purchase credits to people who bought iPhones before the price change.

One thing Apple didn't cut was its iPhone sales target. Jobs said the company remains on track to reach the 1 million mark by the end of this month.

— Gregg Keizer

BETWEEN THE LINES *By John Klossner*

BENCHMARKS LAST WEEK

Palm Inc., which last month said it was on track to ship its Foleo lightweight PC this summer, instead pulled the plug on the Linux-based system. The Foleo was supposed to work with Palm's Treo smart phone.

Intel Corp. released six Xeon 7300 chips, its first quad-core devices designed for servers that have multiple processor slots and run high-end workloads such as virtual systems, databases and ERP applications.

TWO YEARS AGO: Google Inc. hired Internet pioneer Vinton Cerf as its "chief Internet evangelist."

Global Dispatches

Bank of India Site Hit by Hackers

MUMBAI, INDIA – The Web site of Bank of India was back online early last Tuesday, four days after hackers forced the financial services firm to shut the site down.

Researchers at Sunbelt Software Inc., a Clearwater, Fla.-based maker of security software, discovered the problem and issued an alert on Aug. 30 warning users of the compromise and recommending that it not be used.

Sunbelt said that the unidentified criminals hacked into the site and inserted malicious code on the bank's main Web page. The code redirected visitors to another site, where malware was downloaded onto their computers, the firm said.

A Bank of India official said that the attack did not affect its online banking operations.

A spokesman for the bank was not available to comment further on the incident.

John Ribeiro,
IDG News Service

Australia Tightens Immigration Laws

BELCONNEN, AUSTRALIA – The Australian government last week unveiled major changes to its General Skilled Migration program that will make it more difficult for companies to bring skilled foreign workers, including IT staffers, into the country.

The updated program, which took effect on Sept. 1, requires more highly skilled workers with stronger English-language proficiency than it did previously.

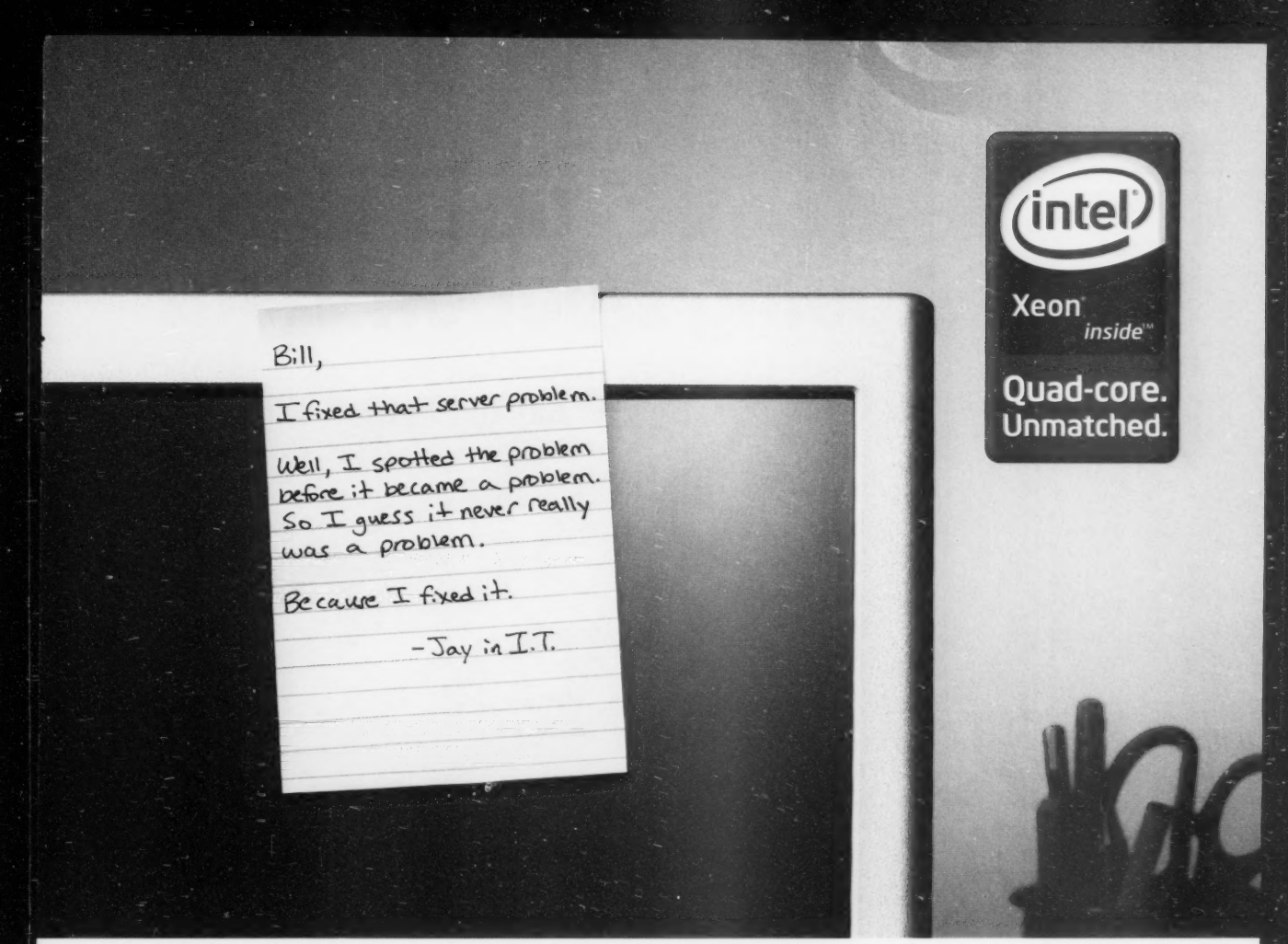
A spokesman for the Australian Department of Immigration and Citizenship, based here, said that under the new regulations, there will be "tighter requirements on links between study, work experience and nominated occupation."

Sandra Rossi,
Computerworld Australia

BRIEFLY NOTED

Oracle Corp. has agreed to acquire Netsure Telecom Ltd., a Dublin-based provider of network intelligence and network data integrity software. Terms of the agreement, expected to close later this month, were not disclosed.

Dan Nystedt,
IDG News Service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-Jay in I.T.

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Update Won't Stop IT Execs From Closing Door on Vista

Microsoft plans to release SP1 early next year, but some users say they'll stick with Windows XP for now. **By Eric Lai and Patrick Thibodeau**

DAVID CLARK

MICROSOFT CORP. says it has sold 42 million volume licenses of Windows since it released Windows Vista to enterprise customers last November. But the company claims to have no statistics on how many of the corporate users who are eligible to move to Vista have actually done so.

As part of its efforts to encourage organizations to take the plunge, Microsoft late last month announced that it will ship the first service pack update of bug fixes and functionality tweaks for Vista during next year's first quarter. The SP1 release will be accompanied by a third and final service pack for Windows XP, Vista's six-year-old predecessor.

But it's no slam-dunk that SP1 will have the desired effect on Vista's corporate adoption rate, judging by the comments of IT managers such as Gregg "Skip" Bailey, CIO at the federal Bureau of Alcohol, Tobacco, Firearms and Explosives.

Bailey said his agency, which is known as the ATF, may stick with Windows XP for up to three more years, even though it plans to begin upgrading its 7,000 desktop PCs with Vista-capable hardware in January.

One of the big reasons for holding off on Vista, Bailey said, is that the ATF won't have enough time between now and January to verify that all of its applications will run effectively on the new operating system.

The ATF, which is part of the U.S. Department of Justice, is beginning a Vista compatibility testing program. But Bailey said that the planned desktop system replacements, which are part of the bureau's normal three-year upgrade cycle for PCs, will be finished before testing is completed.

In addition, Bailey doesn't see a compelling need to move quickly to Windows Vista. He said that although he thinks it offers advantages over Windows XP in the area of data security, the problems addressed by Vista are things "we have solved in other ways."

Another CIO who works at a Texas bank that has more than 35,000 desktops running Windows XP said he plans to hold off on Vista for "at least" another year.

"Vista adds a lot of overhead and not much benefit. Honestly, we don't see the value-add," said the CIO, who asked not to be named.

He added that his reluctance to move to Vista is out of character, given that the bank uses Microsoft software across the board and he has a personal history as an early adopter of Windows

Continued on page 20

■ Gregg "Skip" Bailey, CIO at the ATF, says that although he thinks Vista offers advantages over Windows XP in data security, the problems addressed by Vista are things "we have solved in other ways."

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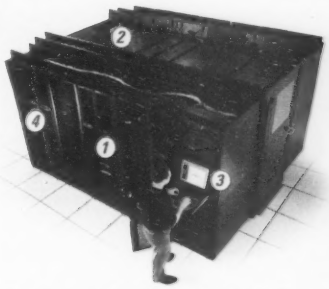

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By Stan Gibson

IT Risk Management: ITS TIME HAS COME

A new discipline has emerged as a critical tool for successful IT strategy

Risk: It's a charged word. No success in any endeavor, especially business, is possible without taking some risks. And yet, no business will survive for long if it is at risk of an infrastructure shutdown, data breach, regulatory noncompliance or unresponsive servers. For many companies, the key to success is finding the right balance of risk—somewhere between the extremes of the unrealistic world of no risk and the harrowing experience of life on the brink.

Understanding and managing risk has always been important, but even as memories of the dotcom collapse, the colossal corporate scandals of the early 2000s, and the Hurricane Katrina disaster recede, the concept of risk management is being embraced in the boardrooms of corporate America as never before.

"There is a trend to adopt a risk management mindset," says Jon Oltsik, a senior analyst at Enterprise Strategy Group in Milford, Mass.

While it's easy to understand that exposure to such risks as financial insolvency, product liability, fires and floods must be mitigated, there's now an emerging awareness that information technology also must be examined through the lens of risk management. That's a change.

IT Risk Gets Its Due

"Certain kinds of risk, such as operational risk, financial risk and credit risk, are taken quite seriously at most organizations, but IT risk is often seen as a small piece of the risk jigsaw puzzle," says Darren Thomson, senior director of the Solutions Engineering Group at Symantec.

The new awareness is long overdue, Thomson adds. "We've reached a point where we are now dependent on IT to support core business operations. When these systems fail, the consequences to the business can be severe. Why wouldn't you assign an executive to that?"

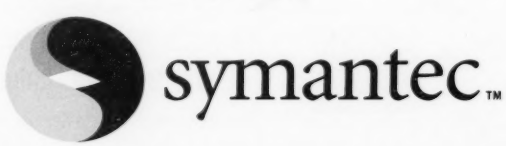
Symantec divides IT risk into four categories:

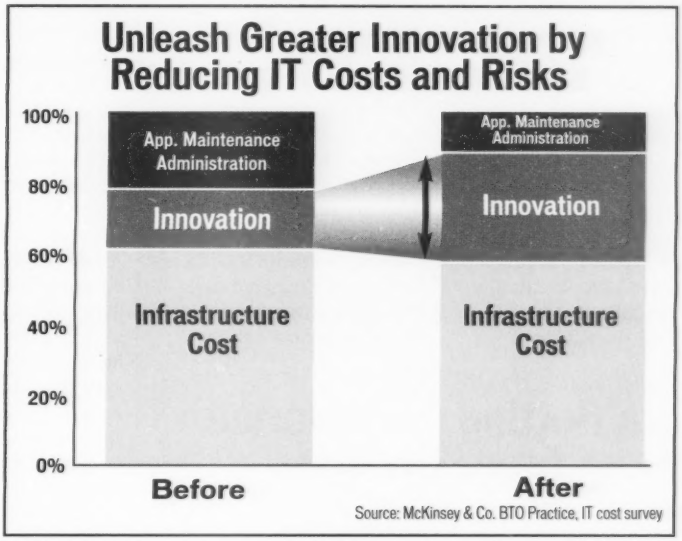
- ***Security***—The risk of unauthorized access to information from inside or outside an organization.
- ***Availability***—The risk that information would be inaccessible due to emergencies or disasters.
- ***Compliance***—The risk of violating regulatory mandates or failing to meet internal policy requirements.
- ***Performance***—The risk that information would be inaccessible due to insufficient server or network capacity.

While nearly all companies have addressed these problems in some manner, too often, they have done so in a piecemeal fashion. Indeed, many companies cling to a patchwork security blanket of ad hoc measures, applied independently over time. This approach may leave serious vulnerabilities unaddressed while other areas suffer from senseless protection overkill.

"You can fall into the trap of being pennywise and pound-foolish," says ESG's Oltsik. He adds, "If you have solved a few security problems, but the people solving them don't talk to each other, you really don't know how secure you are."

What's needed, say Oltsik and other experts, is a systematic analysis of IT risk that will expose lapses in protection and suggest appropriate mitigation investments. The result, says Thomson, is that a company will be better-run. "There is an intrinsic link between IT risk and IT operational efficiency—risk mitigation tends to improve efficiency."





Freeing Up Cash for Strategic IT

By helping a company shore up assets and cut waste, IT risk management can free up funds for investment in innovation in strategic areas. For example, one leading European telecommunications service provider was able to significantly increase investment in new applications even though the company kept its IT spending flat over a span of four years. A disciplined approach to IT risks enabled this organization to cut spending on IT operations and management, while pouring the savings into business innovation.

IT risk management can also help companies develop confidence to innovate aggressively with IT. For example, the Formula One race division of a leading European auto manufacturer relies on data collected from competitions to improve the design of auto surfaces in between races. In this high-performance environment, access to applications, data and e-mail is crucial. With help from Symantec, the auto manufacturer found ways to consolidate servers, achieve high application availability and protect its data. The organization is now enjoying application availability of 99.3 percent, a two-point jump from previous levels. Plus, they were able to sidestep an anticipated purchase of 23 servers and cut total cost of ownership. IT risk management has helped the race division use IT to win two world championships in a row, while reducing costs and improving IT efficiency.

Developing an IT Risk Management Strategy

"When it comes to managing IT risk, companies often need help identifying where to get started," says Thomson. To address this need, Symantec Global Services developed Foundation IT Risk Assessment as a cost-effective means to provide clients with an overview of their IT risk exposure and guidance on priorities for remediation.

Symantec began studying IT risk some five years ago, before the words "discipline" and "IT risk management" could be used in the same sentence, notes Jennie Grimes, senior director of Symantec's IT Risk Management Program Office. Building on such best practice sources as ITIL (Information Technology Infrastructure Library) and ISO (International Standards Organization) 17799, Symantec has developed a highly advanced IT risk management center of expertise.

"We wanted to help customers look at what it costs them to do risk mitigation. In some cases, they may be spending a lot preventing something that is not a threat or vulnerability," says Grimes. One example of the fruit of Symantec's IT risk management research is INFORM, a proprietary tool for assessing a company's IT risk controls. INFORM can be used on its own or as part of a Foundation IT Risk Assessment engagement. In addition, information gathered by INFORM is compiled in Symantec's IT Risk Management Report, a detailed analysis of IT risk management patterns across hundreds of companies.

Symantec's research and the resulting IT Risk Management Report exposed some facts that were troubling. For one, says Grimes, "junior-level employees tend to perceive greater exposure to IT risk than most executives." To correct that skewed perspective, says Grimes, some companies are creating new high-level positions, such as vice president of IT risk management, or CISO and VP of Business Continuity, in order to ensure that awareness of IT risks is as acute in high places as it should be. In addition, there is a heightened awareness of IT risk management in many boardrooms, which is paving the way for acceptance of these new positions.

Although IT risk management initiatives can be justified on the basis of risk mitigation alone, these efforts almost invariably improve operations and yield savings. Recovered funds can be applied to drive innovation, which in turn drives competitive advantage. In addition, as companies improve their ability to understand and mitigate IT risk, they can take calculated risks with greater success and embrace new technologies faster. With those returns, it may not be long before the term "IT risk management" is replaced by "IT reward management" instead.

Stan Gibson is former executive editor of eWeek *and a technology writer from Boston.*

Want to assess your IT risk exposure? Go to www.symantec.com/itrisk to learn more about Symantec Foundation IT Risk Assessment.

Continued from page 16
releases. For example, he moved to Windows 2000 and XP when they were first released to manufacturing.

But even after Windows Vista SP1 becomes available, he expects to roll out the software to only a few developers and other users within IT. "We will probably go to Vista eventually, but we will take our time about it," the CIO said.

Microsoft can point to some budding corporate-deployment success stories for Windows Vista. David Zipkin, a senior product manager at the software vendor, said companies that should have the operating system running on at least 10,000 PCs by year's end include Citigroup Inc., Continental Airlines Inc. and Charter Communications Inc. The same applies to India-based IT services firms Tata Consultancy Services Ltd. and Infosys Technologies Ltd., which are both Microsoft business partners, he added.

Microsoft plans to release a private beta version of SP1 to about 15,000 partners and users sometime this month. Another beta or a more fully developed "release candidate" will be distributed to a larger pool of testers later on, the company said.

IT managers typically wait to deploy the latest versions of Windows and other major Microsoft products until an SP1 update arrives because of the copious number of fixes that the new release often contains.

The SP1 release of Windows Vista is both technically and symbolically important for corporate users, said Ben Gray, an analyst at Forrester Research Inc.

"Regardless of whether this is justified or not, experience tells desktop managers to not deploy a new Windows operating system until SP1," Gray said. He predicted that the update will spark "full-scale enterprise adoption" of Vista by the middle of next year.

Others aren't convinced of that, though.

"There are still a lot of things that need to be in Vista for the OS to really take hold," said Gartner Inc. analyst Stephen Kleynhans. He was referring partly to Microsoft's need to resolve Vista's well-publicized problems with device and software compatibility.

Zipkin contended that Microsoft has made much progress on compatibility. He said that as of last month, more than 2.2 million devices supported Vista, up from 1.5 million last November. And 2,076 applications had been certified to work with the operating system, compared with just 254 when shipments began.

But David Milman, CEO of Rescuecom Corp., said some of the computer support center operator's small business customers have reverted back to Windows XP because of their dissatisfaction with Vista's performance on older hardware. "There's no question that XP is the most solid Windows platform right now," he said.

At the ATF, Bailey wants to have PCs in place that could handle Windows Vista when Microsoft drops mainstream support for Windows XP in April 2009, as is currently planned.

But the CIO is crossing his fingers and hoping that XP support will be extended beyond 2010. Bailey said that would enable the ATF to finish its upcoming three-year PC life cycle on XP and put off a move to Vista until the next hardware refresh. ■

Gregg Keizer contributed to this story.

Vista, Take 2

Microsoft said the SP1 release of Windows Vista will include the following improvements:

- Fewer prompts for information from the User Account Control security feature
- Faster copying and unzipping of files
- Speedier system wakeups from standby or hibernate modes
- Reduced battery drain and better external display performance on laptops
- Expanded support for using the BitLocker feature to encrypt disk drives and partitions
- The ability to disable Vista's built-in desktop search engine in favor of Google Desktop or other tools

Vista Getting Acceptance Letters From Colleges

MUCH OF corporate America may be holding off on deploying Windows Vista, but many colleges and universities aren't waiting.

Spurred on by the need to keep up with their prime constituency – students – schools both large and small began supporting or rolling out Vista in time for the new academic year. Moreover, many universities have negotiated campus-wide licensing agreements that will enable students to get Vista upgrades for as little as $10.

"We've just kind of had to go with the flow," said Sue Workman, associate vice president of support at Indiana University. Workman's team handles 20 million help requests per year from the more than 115,000 students and employees at IU's eight campuses, and it began supporting Windows Vista last November.

Some professors and other workers are asking to stay with Windows XP, primarily for application compatibility reasons, Workman said. But she added that one-third of the PCs used by employees and in campus computer labs should be running Vista by year's end as part of IU's rolling three-year system upgrade cycle.

The IT department at Temple University issued a memo last January recommending that users not move to Vista at that time. But the Philadelphia-based school plans to start a rollout of the operating system this fall for new as well as existing PCs.

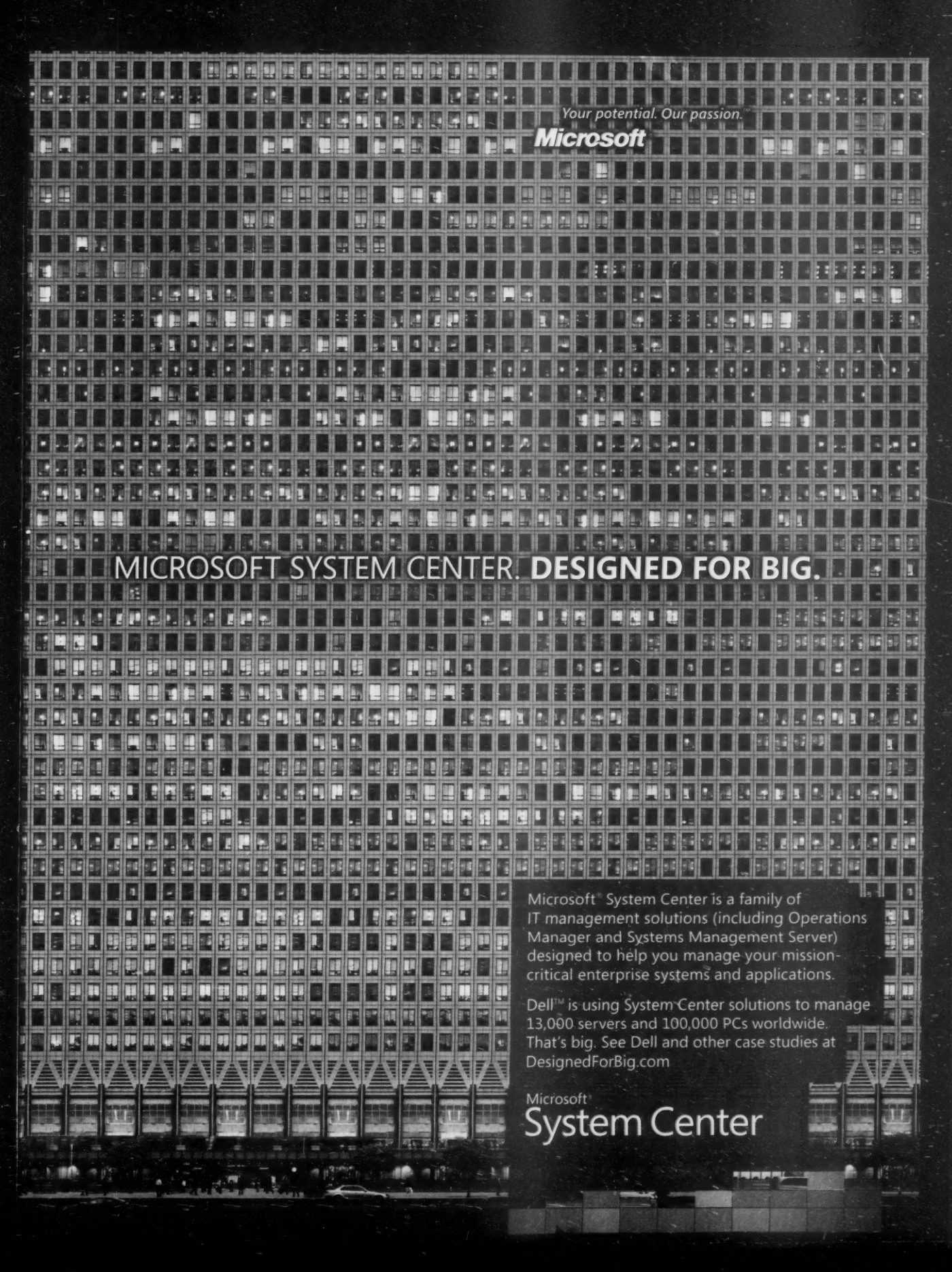
"We've been testing and testing," said Sheri Stahler, associate vice president of computer services at Temple. In doing so, the university has encountered several courseware tools and other educational applications that won't work with Vista or the Internet Explorer 7 browser, Stahler said.

But, she added, the good news is that the vendors of those products are working to fix the incompatibility problems.

Thomas College in Waterville, Maine, also made an early move to support Vista. Thomas, which has 650 full-time students, began testing the operating system and Office 2007 last November and completed a campuswide upgrade of its school-owned PCs in June.

"Students are demanding to get [Vista] as soon as possible," said Christopher Rhoda, the school's vice president of information services. "If there is a better tool out there, why would we hold back?"

– ERIC LAI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States Move Toward The Center On IT — Finally

West Virginia, Michigan and others are following the private sector's lead and consolidating their servers and data centers.

By Patrick Thibodeau

WEST VIRGINIA is part of a wave of states that are embracing data center and server consolidation in their government IT operations. It's replacing 85 e-mail servers that run a half-dozen different applications with four Exchange-based systems — two for production, and two for backup.

And that's just for starters. Kyle Schafer, West Virginia's chief technology officer, wants to extend the consolidation initiative to the state's financial, procurement and human resources management systems. The savings on hardware alone justify the move, according to Schafer, who said that West Virginia currently replaces as many as 20 e-mail servers annually as part of its regular hardware refresh cycle.

Schafer knows that consolidation is old hat to many of his corporate IT counterparts. "Most Fortune 500 organizations run with less than a half-dozen e-mail servers," he said.

And he speaks from experience: Before becoming West Virginia's CTO two years ago, he was director of technology and design at electric and gas utility NiSource Inc.'s corporate services subsidiary in Columbus, Ohio.

Having spent years in the private sector, Schafer found state government IT to be entirely different. Individual agencies often have autonomous IT departments, and centralized management of technology remains a work in progress for most states. Schafer said that in West Virginia, he found servers "housed all over the place" — even in switch rooms and wiring closets. In addition, there were no central data backup or security controls.

"It was somewhat of a shock to me to come into state government and see the level of autonomy that state agencies had over the technical infrastructure," Schafer said. But now, states "are moving in the same direction that private industry has already taken," he added. "We're just a couple of years behind that curve."

Of 29 state governments surveyed last spring by the National Association of State Chief Information Officers, nearly 80% had proposed a data center consolidation project, were developing plans for one or had a project in progress, according to a report released last month. The study was conducted by the NASCIO's Infrastructure and Services Committee, which Schafer co-chairs.

■ **"The impact is just enormous," says Michigan CIO Teri Takai about her state's consolidation of data centers.**

The report said that Michigan has closed 21 data centers over the past two years in a consolidation effort. That has saved the state $9.5 million thus far, according to the report, and Michigan officials expect the savings to amount to as much as $20 million over five years. The state has also avoided $7.3 million in capital costs that it would have incurred to upgrade its data centers and computer rooms. And it has regained more than 29,000 square feet of floor space.

Michigan CIO Teri Takai said last week that the consolidation of the state's IT operations into three data centers is scheduled to be completed in November. "The impact is just enormous," she said. Some of the old data centers were developed on an ad hoc basis and located in former conference rooms and other facilities that weren't well suited to computers. Now, Takai said, the state's systems are being housed in full-fledged data centers with redundant power equipment and tighter physical and network security.

Another reason why some states are moving to consolidate and better integrate their systems is to comply with new electronic-discovery legislation. For instance, the sate of Washington is deploying a unified e-mail archiving system from Symantec Corp. and later this year plans to seek bids on tools for searching the archives, said Gary Robinson, the state's CIO. Robinson led the preparation of an "impact statement" on e-discovery that the NASCIO released last week.

In West Virginia, the practice of allowing state agencies to make their own computing decisions led to the deployment of the various e-mail applications that Schafer now is working to winnow down to Exchange.

The consolidation project, which includes creating a single e-mail domain for the state's 20,000 employees, will take 12 to 18 months to complete, according to Schafer. "What we're moving to," he said, "is more of a horizontal approach to application delivery across state agencies." ■

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On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

WHY, THAT'S CASH! PRE-INTERNET CURRENCY! QUICK, CALL ECURITY!
EEP! WHAT'S THAT?!
BUT, CASH GOOD..
CHECK OUT
TAKE THOSE FOSSILS SOMEPLACE ELSE, CROMAGNON DUDE!
IMPLANT SCANNER

MATTHEW FAULKNER

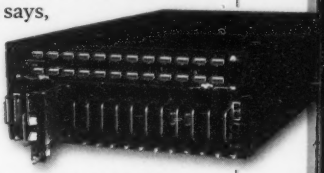
Cash Dethroned as King

THE MONEY in your bank account is as valuable as ever, but the greenbacks in your wallet will rapidly become a thing of the past. That's the conclusion of Foster City, Calif.-based Visa U.S.A. Inc., after checking in with 1,000 baby boomers and their echo-boomer kids for its annual survey on consumer spending. The respondents said that checks and cash are passé and they prefer electronic transactions. Wayne Best, Visa's chief economist, says 79% of baby boomers and 74% of echo boomers believe that the U.S. economy will be cash-free in the near future, perhaps as early as the next decade. Best says that in the past 10 years, check usage has fallen from more than half of all economic transactions to less than one-fourth. He contends that the ramifications of such shifting attitudes toward cash are substantial, especially considering that boomers will account for $7 trillion of the $15 trillion U.S. economy in 2015. With a huge percentage of consumers ready to make the shift, CIOs, particularly in retail operations, need to aggressively review all cash-processing operations and shift as many as possible to electronic exchanges. For example, if your business isn't able to handle debit cards, it should be. In 1996, Best says, only 2% of adults used them. Today, 75% do.

19%
Segment of the 2006 U.S. economy involving cash, says Visa U.S.A.

Virtualize Your I/O

Your storage-area network (SAN) virtualization work is most likely done, and server virtualization is well under way. But don't stop there, says Ashok Krishnamurthi, CEO of Xsigo Systems Inc. in Sunnyvale, Calif. With new technology from his company, you can also virtualize the I/O of your Ethernet media access control (MAC) addresses and your SAN's Fibre Channel World Wide Name (WWN) addresses. When you need to move an application around your data center hardware today, server and SAN administrators have to scramble to adjust the MAC and WWN addresses fixed to the app. With I/O virtualization, Krishnamurthi says, "administrators no longer need to touch the devices to change the way the server is going to be used." He also claims that Xsigo's VP780, available this week, will not only make your data center more responsive to the vagaries of computing demands, but also cut your costs in half for a 120-server installation by reducing the number of switches, Fibre Channel cards and cables. Pricing for the VP780 starts at $30,000.

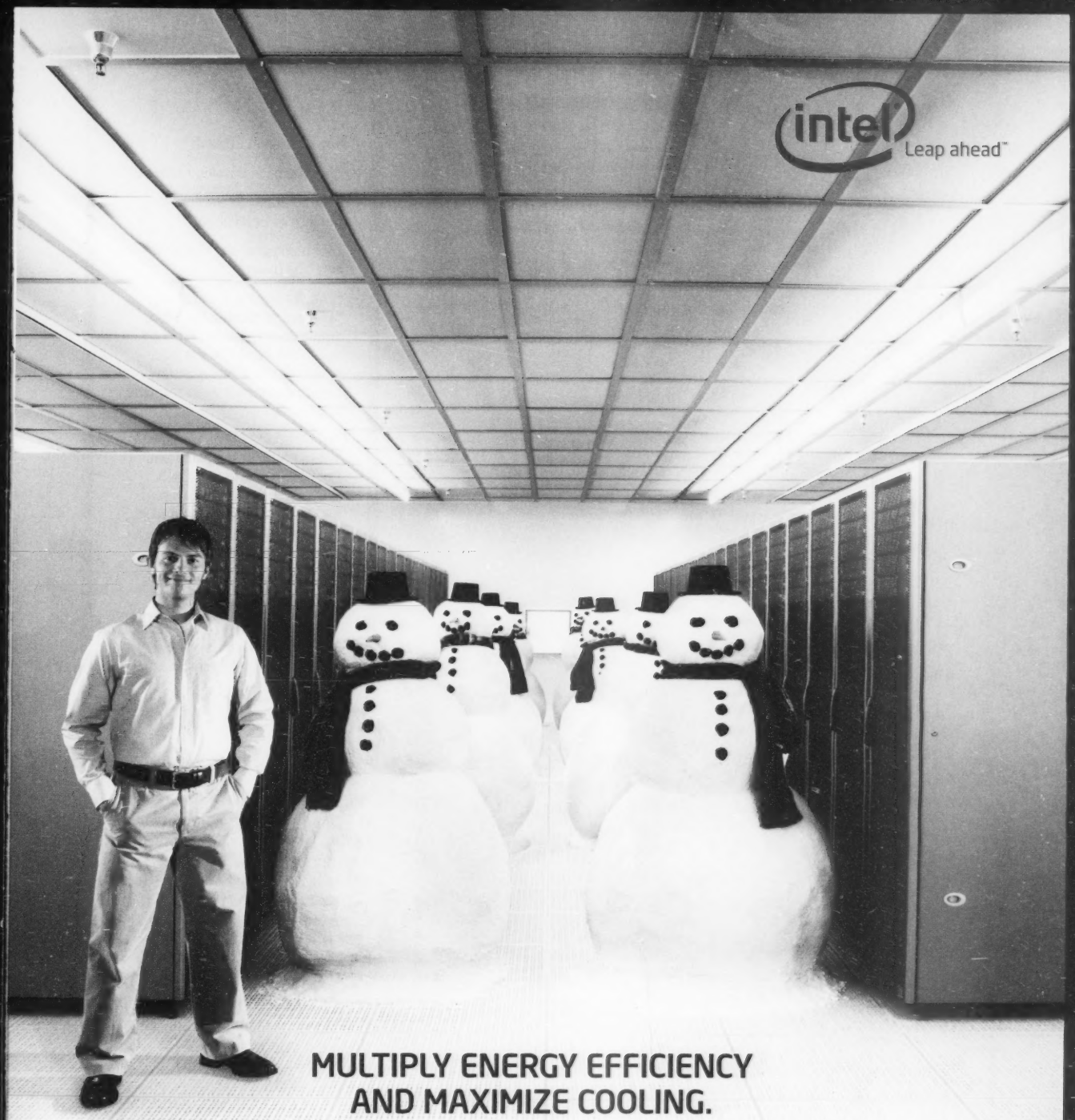


The VP780 virtualizes your server's SAN and network I/O.

And if you have already virtualized your server farm, consider eG Enterprise 3.4, which this week adds the eG Monitor for VMware Infrastructure module. Srinivas Ramanathan, CEO of eG Innovations Pte. in Singapore, says the company's single, universal agent can keep tabs on the health of all of the applications running in your virtual environment because not only does it understand VMware conditions, but it also reports on the health of guest operating systems sharing the server. Pricing starts around $2,000 per server.

Get Smart Graphics

SmartDraw 2008 debuts this week. The upgrade, from SmartDraw.com in San Diego, sports an Office 2007 look and feel and packs in thousands of new templates for all sorts of business activities — so simple, even a pointy-haired boss, à la "Dilbert," could use them (maybe). According to Todd Savitt, vice president of business development, "You can create any business graphic in five minutes or less." IT shops will benefit from templates designed for software design, network layouts, workflow, data flow and virtually every other IT task. You can integrate SmartDraw views with Google Maps and import Excel data to create charts. A single mouse click lets you output files as PowerPoint slides or PDFs. Pricing starts at $297. ■



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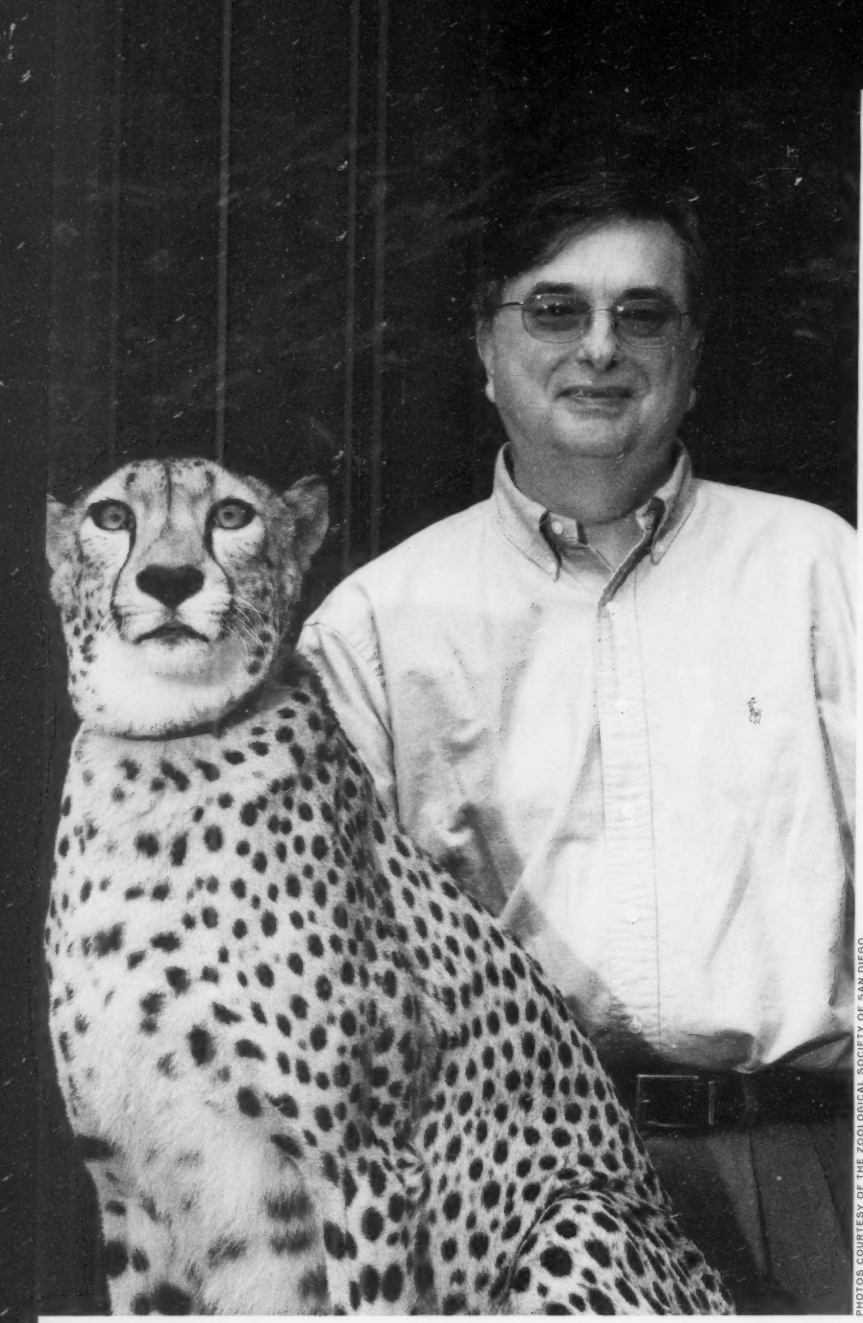

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Dossier

Name: Robert Erhardt

Title: Chief technology officer

Organization: Zoological Society of San Diego

Technology he can't do without: The Internet

Favorite nonwork pastime: "We like to camp a lot. Also, amateur astronomy. We'll go out to the desert in the fall when it's clear and see how far we can reach with our little telescope."

Role model: "Abraham Lincoln. When I look at the problems I have to solve in the ZIMS project, they pale in comparison to the problems he had to solve in getting through his presidency."

Favorite vice: "I never met a cheeseburger I didn't like."

Last book read: *Team of Rivals: The Political Genius of Abraham Lincoln*, by Doris Kearns Goodwin

■ THE GRILL

Robert Erhardt

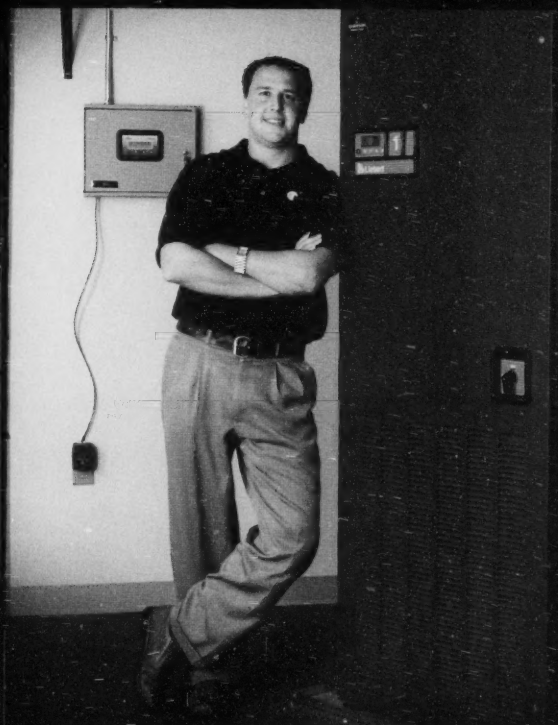
The **San Diego Zoo's CTO** talks about **saving species** from extinction, developing a **worldwide medical database** for animals and **tracking condors** with RFID.

Robert Erhardt is chief technology officer for the Zoological Society of San Diego, which operates the San Diego Zoo, its Wild Animal Park, the Beckman Center for Conservation Research and the Foundation for the Zoological Society. Prior to joining the Zoological Society in 2001, he was CIO at Disney Regional Entertainment.

What brought you to the zoo? We spent a lot of time vacationing in San Diego and spent a lot of time at the zoo. When the call came, I said, "Gee whiz, that's a tough one to pass up." The second thing was Disney was changing its strategy to shift to more of a Microsoft model, where they are selling intellectual property and not getting into brick-and-mortar businesses. It wasn't going to be the same business environment going forward, so I was up for another challenge. I like to tell people I left a Mickey Mouse organization to come to a place that's a real zoo.

What's the most fun thing about this job?

Continued on page 30



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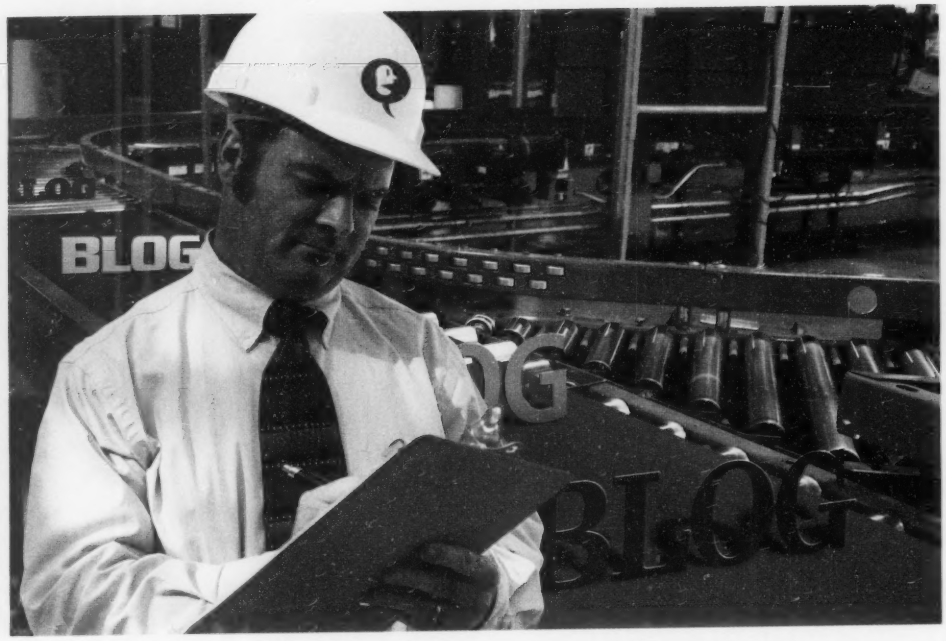
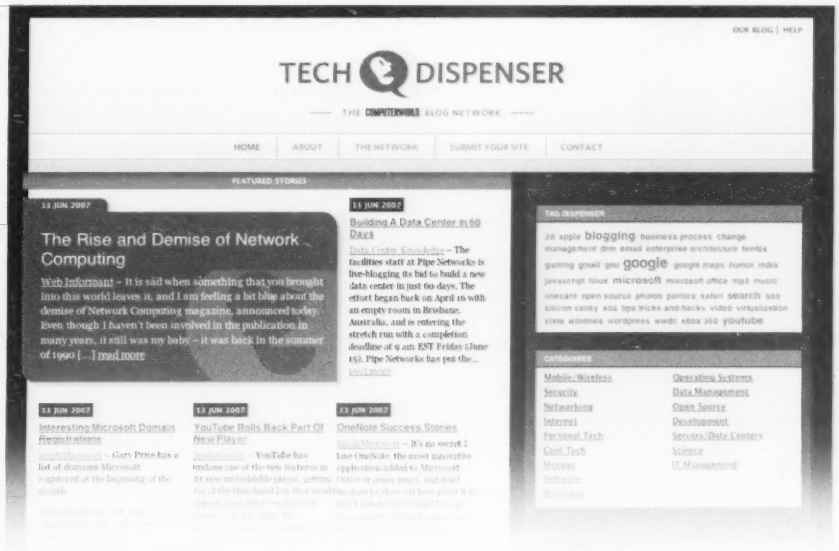


Only the good stuff gets through.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The Rise and Demise of Network Computing
Web Informant – It is sad when something that you brought into this world leaves it, and I am feeling a bit blue about the demise of Network Computing magazine, announced today. Even though I haven't been involved in the publication in many years, it still was my baby – it was back in the summer of 1990 [...] read more
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Building A Data Center in 60 Days
Data Center Knowledge – The facilities staff at Pipe Networks is live-blogging its bid to build a new data center in just 60 days. The effort began back on April 16 with an empty room in Brisbane, Australia, and is entering the stretch run with a completion deadline of 9 am EST Friday (June 15). Pipe Networks has put the... read more
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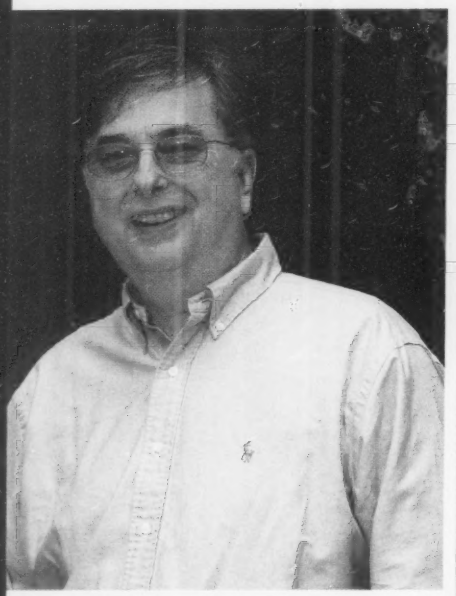


"When our first panda [Hua Mei] was born, we got calls from local employers saying that their employees were spending way too much time watching our baby panda [online]. You know you're having an impact when that starts to happen.

Continued from page 26

Every day, we're having an impact on the future of species survival around the world. Because of habitat destruction and natural and man-made environmental issues, we have become the last opportunity for some species to survive. There aren't many jobs you can go to and have that kind of a mission in front of you.

What does a CTO do for a zoo? It's several businesses rolled into one. We have front-of-house things like ticket sales and merchandise sales and food service sales, and point-of-sale and inventory systems to support all of those. Then you have catering opportunities with people using the zoo as a venue for events.

Then you get into the next layer, which is the animal care layer. That's where I've had the most challenge and the most interest from a technology perspective.

What's the coolest project you've worked on? We are collaborating with the rest of the world to develop a product named the Zoological Information Management System. It's going to be a .Net-based, state-of-the-art tool that will allow animal care folks to change the way they do business in managing massive collections in zoos and aquariums around the world. ZIMS will revolutionize the way business processes surrounding animal care are done.

When did ZIMS launch, and where are you now with it? We started five and a half years ago. The Zoological Society of San Diego has played a critical role in the development and ultimate rollout. Right now, we're 85% to 90% done.

What will ZIMS do, exactly? I'm sorry to say that even in an institution as large as ours, the vast majority of clinical records are paper-based. That limits your ability to do research. When someone has a clinical file out on an individual or group, that data is not available to anyone else.

When ZIMS comes online, all of that data will be available. It will allow us to share best practices around the world for animal care. Organizations will be able to go online and get reliable information instantaneously. It will be a real-time [application service provider] model.

For example, standard red blood cell counts for various species of primates are virtually unknown today. With ZIMS, we'll have a central repository where we come up with a set of standards and normative ranges for those standards, or morphometrics, to let institutions know whether their individuals of a particular species are healthy.

Even humans don't have electronic medical records yet. When this project is done, we will be light-years ahead of human medicine in our ability to share data.

You also have a panda-cam that's pretty popular. When our first panda [Hua Mei] was born, we got calls from local employers saying that their employees were spending way too much time watching our baby panda [online]. You know you're having an impact when that starts to happen.

How much traffic did you get? It was in the millions — 9 million page views for that month. We average about 5,000 page views a day.

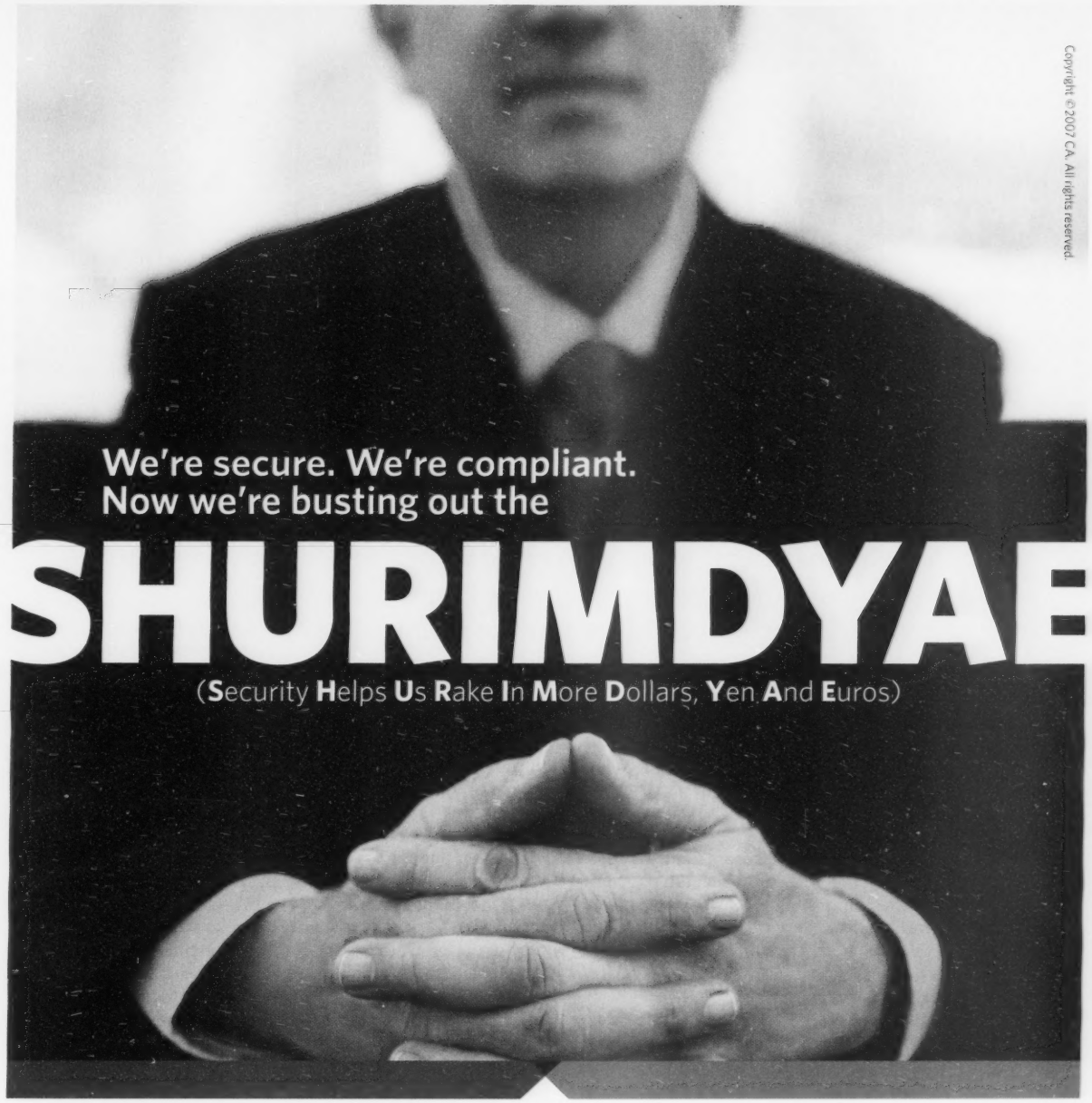
Do you use any emerging technologies? We use RFID [for] identification of the animals. We're using radio telemetry extensively in the field — for example, in our condor-release project in Baja, [Calif.]. All of those condors are fitted with radio tracking collars. Some of them are using satellite telemetry, and others are using a cellular-based technology on a localized basis. Then we have radio telemetry tracking tools our scientists use to locate any individual through triangulation.

We're investigating the potential of using handheld devices for our keepers to be able to keep their data logs and observations. The handheld devices will be put in cradles and interface with ZIMS to collect the daily keeper information.

What is the least-fun part of your job? We're not-for-profit, and we have to watch every penny. We're cognizant of the fact that every dollar we spend on technology is a dollar we can't spend on conservation. So we have to be very prudent about making those investments.

How big of an issue is security for you? It's extremely frustrating. We are continually dealing with it, and it is a continually escalating drain on our resources. Our collections are not too much at risk [from terrorism]. They are at risk from animal extremists who do not wish us well. We constantly have to be vigilant to make sure our security efforts are sufficient to keep [potential] intruders outside of our firewall.

— *Interview by* **Robert L. Mitchell**



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■ OPINION

Virginia Robbins

Cooling Down From High Stress

EACH YEAR, there are just six days — three in late spring and three in late summer — when I wish we had air conditioning in our 97-year-old house; the rest of the year, the breezes off the bay keep the place under 73 degrees. The tough part of each stretch of three days is that by the second uncomfortable night, it's hard to remember what cool feels like. The old house and everything in it, including the people, have completely lost touch with what's normal, and we residents lose all perspective. Dire thoughts that it will always be like this take over our minds.

Stress can have a similar effect. I'll be working on a project I badly wanted but is turning out to be more challenging than I expected, and suddenly the stress starts to rise like humidity in August.

Stress can be sneaky like that, influencing your decisions and performance before you're even aware that it has permeated your mind.

I have experienced my share of stress over the years, and I've managed to identify some early warning signs.

Many years ago, a colleague told me that as soon as she felt that her husband's telephone calls were an unwelcome interruption, she knew she had lost her balance and it was time to step back. I've heeded this advice. Whenever I feel the urge to duck calls from family members, I know that I'm not working at my best and it's time to take a break. Instead of an unwanted interruption, those calls should be a welcome diversion.

Another telltale sign is that I'll start dropping favorite routines so I can work more. I might stop going to the gym, reading the paper or visiting my favorite coffee shop before work. Again, when I catch myself doing that and reinstate these satisfying activities, my stress level drops. I might sacrifice some of the time I would have spent on my project, but the quality of my work increases enough to make up for that.

■ Having experienced my share of stress, I've identified some warning signs.

If I let in too much stress, then a more dangerous sign crops up: I start to miss small deadlines. I often see this sign in my team as well, as employees who are normally very good about meeting their commitments suddenly become sloppy or inconsistent.

Finally, stress shows up in appearance. People start to look tired and worn or seem uninterested in what's new. Look around you: If everyone working for you looks as tired as you feel, then it's time for you as the manager to figure out how to reduce the stress for the entire team.

A lot of stress is artificial. I mean, how many of us hold lives in the balance? We aren't surgeons, policemen, soldiers, airline pilots or even safety officers for mining operations. As information technologists, we might support some of these people, but the primary responsibility for life-or-death decisions isn't in our hands.

Our stress is, in a way, self-imposed. We create our own deadlines and, in most cases, agree to artificial constraints without giving it much thought. The vast majority of stress is caused by a social need — because a boss said so or because she set a deadline without knowing enough of the details.

Your job as manager is to ensure consistent performance from your team. If high stress is keeping team members from performing well, then it's up to you to fix that. Take the time to discover which part of your stress is the most fictional. Like a nightmare, much of the stress of work can be refocused into more positive energy.

So when you start to feel the heat of too much stress, remember that it's up to you to bring the cool breeze of reason back to the workplace. ■

Virginia Robbins *is a former CIO who is currently the chief administrative officer responsible for bank operations at the California Bank of Commerce. You can contact her at vroggins@sbcglobal.net.*

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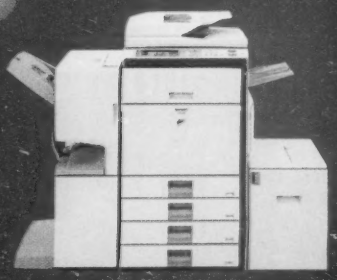

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Job Swapping FOR Fun AND Profit

When FedEx IT managers spend six months in one another's shoes, everybody benefits.

By Mary K. Pratt

AS MANAGING DIRECTOR of shipment data capture at FedEx, Martha Carr had plenty of challenges and ample professional fulfillment. But she wanted new perspectives, more exposure and bigger opportunities. "I felt like I needed an external U.S. experience," Carr says.

Although international positions don't come up often, Carr's bosses gave her the experience she was looking for: They let her temporarily swap jobs with Roger Van Beeck, FedEx Express Corp.'s Brussels-based director of application and architecture for Europe and Africa. "It was the best learning experience I had," Carr says.

She was able to get it because Memphis-based parent company FedEx Corp. has a formal program for rotating IT managers. The goal is to give workers the experience and visibility they need to advance their careers, says Sherry

Aaholm, executive vice president of FedEx Services, which houses most of FedEx's IT organization. "We want people to know that having broader exposure is what makes you valuable," she says.

But the rotation program benefits the company as well as the individual participants Aaholm says. Rotations have helped to knock down silos in IT, spread best practices throughout the organization and create opportunities for subordinates to step up.

> **"It's extremely difficult if you stay in one siloed area to get the perspective [you need] for FedEx.**
>
> **SHERRY AAHOLM** (ABOVE), EXECUTIVE VICE PRESIDENT, FEDEX SERVICES

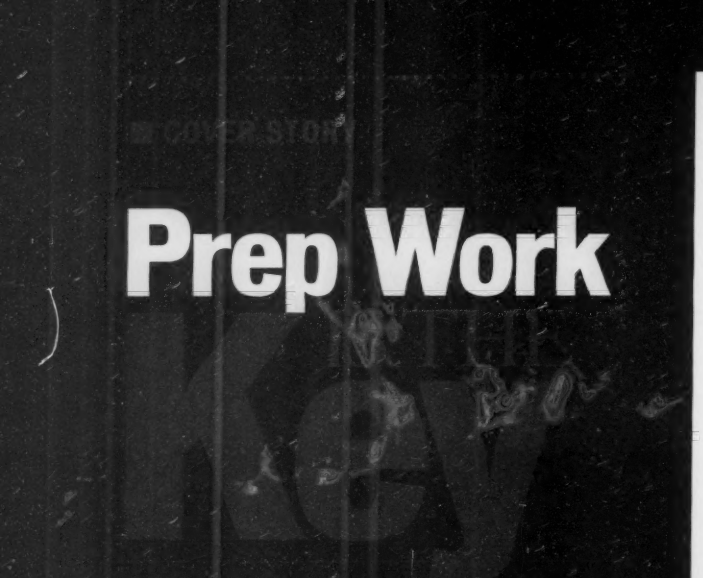
Employee rotations came out of IT's "6x6" transformation initiative, which is aimed at making the department more agile, fluid and responsive to business needs. (The name comes from FedEx's IT governance program, which established six initiatives to be completed by 2006.) Aaholm says that because she and CIO Rob Carter came from outside of FedEx and had moved through different areas of IT, they understood the importance of being exposed to different technologies, disciplines and divisions. They wanted FedEx employees to have the same opportunities to grow professionally.

So FedEx set up a program that allows IT managers at some point in their careers to take a six-month rotation, essentially swapping jobs with someone else. Some swap positions through an international program; others swap domestic positions, and some high-potential workers participate in the yearlong leadership-building Purple Pipeline Program, which includes a six-month job swap.

And now managers are looking at extending the program down the chain so that lower-tiered workers among the 7,000 IT staffers can also take part, Aaholm says.

FedEx doesn't know exactly what it costs to rotate its employees, but it calculates the total annual cost of its Purple Pipeline Program, in which 16 workers participate each year, at less than $15,000.

Prep Work



ROTATED workers at FedEx acknowledge that job swapping isn't easy. "It's difficult to manage a group you don't know anything about, and to leave a group that you really do know and make sure that nothing falls off the rails," says Terry Pavey, director of IT at FedEx Express in Canada, who switched jobs with Beth Galetti, an IT director in Colorado Springs. He adds that his biggest concern was making sure his customers weren't negatively affected by the rotation.

Pavey says detailed preparation helped minimize the risks involved in switching jobs. He and Galetti agreed in advance that for their six-month rotation, they would both have two jobs, keeping responsibilities for their original positions as well as taking on the duties of the new one. They also agreed that they owned each other's projects but that the original leader would handle personnel issues. "That helped us make sure nothing fell off," Pavey says, and it also helped ease employee concerns about the switch.

Such pre-rotation collaboration is part of what makes the program work, Aaholm notes. "We ask the swapped employees to work together to lay out how to transition the work, and we feel it is best to let that happen at the employee level. It creates a partnership between both individuals to ensure success," she explains.

Geographical issues also present challenges, since the rotated employees must decide whether to temporarily uproot their families or make trips back home (at the company's expense). Rotated workers have done both, depending on their own families' needs.

Veterans say they were also concerned about how to make the most of their six-month rotations. "You have to recognize you can't do everything; you can't get all the knowledge that someone in the job for years had," Galetti says. "We had to be very focused about what each of us was trying to accomplish."

For example, she says she recognized that she couldn't successfully jump into certain ongoing projects in Pavey's operation, such as a continuing effort to improve the FedEx legacy systems, so she had to leave those initiatives alone. But she knew she wanted to get experience running an end-to-end IT operation, something that Pavey's job entailed.

Galetti made sure she got that kind of experience. And that, in turn, moved her career ahead. After her rotation, Galetti was promoted to vice president of IT for Canada, Latin America and the Caribbean. She's now vice president of IT for Europe and Africa at FedEx Express.

—MARY K. PRATT

As for an exact return on investment, Aaholm says, "there are a lot of intangibles that we're not out there measuring."

But she says that the payback is clear. "It's extremely difficult if you stay in one siloed area to get the perspective [you need] for FedEx," she explains. "That is by far the greatest value of rotating employees: having them get that broad business knowledge."

NEW PERSPECTIVES

Mary Gonzales' experience is a case in point. She has no doubt that her rotation has produced unmeasurable returns.

As manager of tech services for customer field support in Los Angeles, Gonzales oversees an eight-member team that works with business customers, helping them integrate FedEx applications. She switched jobs with Philip Rencher, who oversees a team of 10 as the Memphis-based manager of corporate headquarters systems. Gonzales says stepping into her new role in January "was a 180 from my whole experience out in the field."

In California, she says, "I work with customers and I have customer issues coming at me. [In Memphis], I had to step back and take a systematic approach to my day. There was a process, and I had to learn to work within that."

Gonzales says her role forced her to learn more about systems development. She also had to learn how to navigate a new political landscape — understanding which managers and teams had what knowledge and responsibilities. Her rotation, which ended in June, has changed how she manages. "Now, instead of rushing forward, I take a step back and evaluate the situation. I get a clearer picture of the entire process," she says.

> **"I had to learn to manage in a new environment.**
> **PHILIP RENCHER,** MANAGER OF CORPORATE HEADQUARTERS SYSTEMS

As for working in the corporate headquarters hierarchy, Gonzales says she has learned from that, too. "It really taught me to have a strong network, to know where to go," she says. "In the field, you're kind of in a silo, but having a broad network allows you to break down those silos and go to the right person to resolve any issue that comes up."

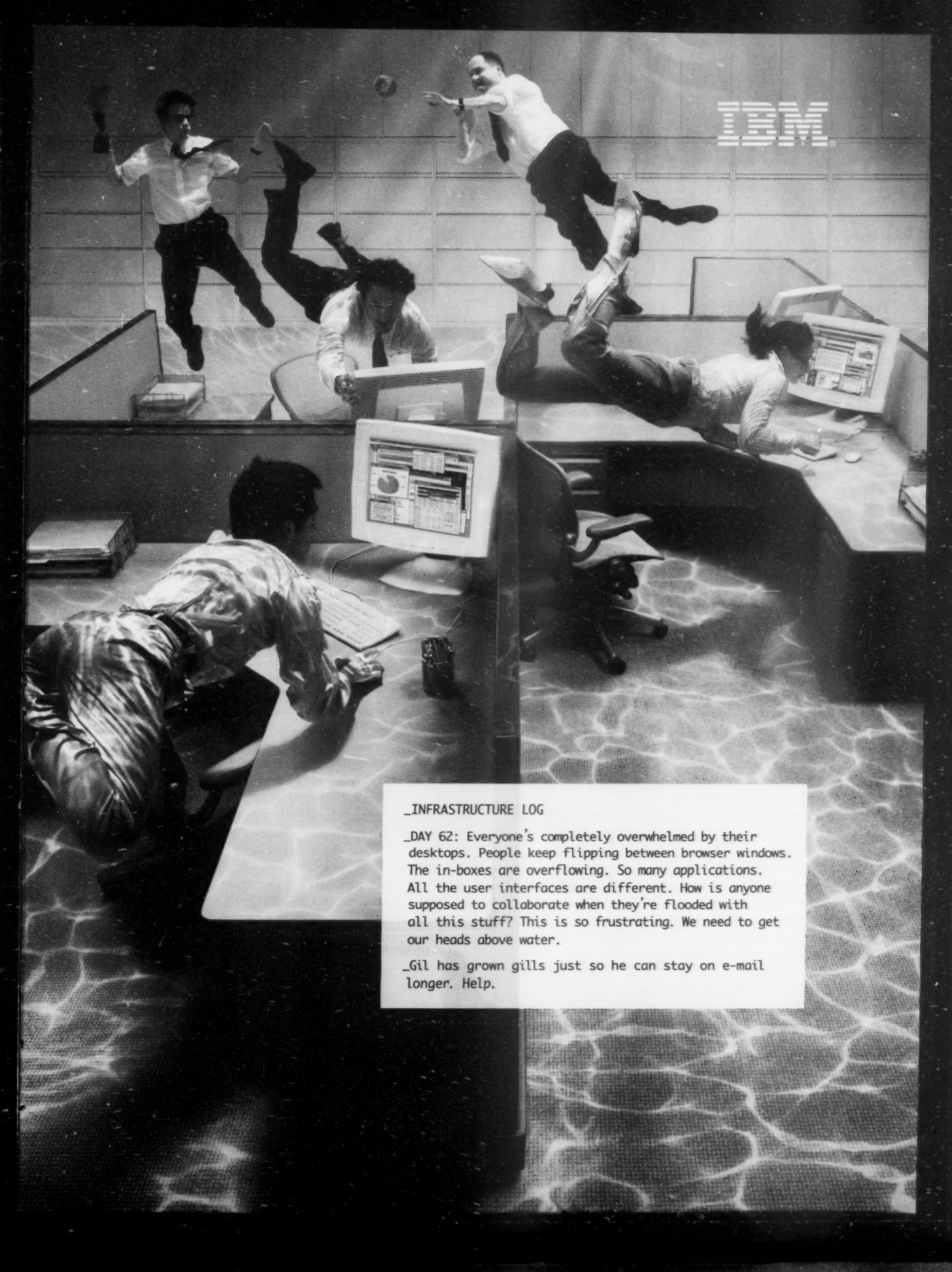
Rencher, who had worked in a back office for his entire career, likewise had to stretch his skills. "One thing that was different: In Memphis, my team sits right outside my door. I walk to their desks, I ask questions, I have meetings in the pod. In L.A., I was thrown into the field. The team works from home, and I had to learn to manage in a new environment," he says.

For example, managing by e-mail and phone was new to Rencher. "It gave me a different experience and prepared me for the future, where I might have remote staff," he says.

INTERNATIONAL LESSONS

Carr and Van Beeck also pushed their skills into new territories when they swapped jobs last year. Carr, who had a staff of 45, was responsible for capturing shipment documents worldwide. About 70 people in six countries reported to Van Beeck, who oversaw about 70 more in India. His work focused on

Continued on page 38


IBM
_INFRASTRUCTURE LOG
_DAY 62: Everyone's completely overwhelmed by their desktops. People keep flipping between browser windows. The in-boxes are overflowing. So many applications. All the user interfaces are different. How is anyone supposed to collaborate when they're flooded with all this stuff? This is so frustrating. We need to get our heads above water.
_Gil has grown gills just so he can stay on e-mail longer. Help.

Six Tips for a Successful Swap

■ **Set clear objectives.** When Roger Van Beeck went to Orlando as part of a FedEx rotation, he was clear about what he wanted to achieve: an understanding of how clearance works in the U.S. and of the ground, freight and other sister companies that FedEx operates in the U.S.

■ **Be responsible for each other's success.** When Mary Gonzales and Philip Rencher swapped spots, they agreed that they would each be responsible for both jobs, not just their new positions. "Mary and I were able to establish a relationship and a commitment to each other that we wouldn't fail," Rencher says.

■ **Prepare both teams.** Rencher visited Los Angeles prior to taking over for Gonzales, meeting her team members, business partners and outside customers. Gonzales took similar steps in the months before their swap. They also copied each other on e-mails, and they remotely joined each other's meetings. "We made sure everyone knew well in advance what was coming," Rencher says.

■ **Prepare the bosses.** Rencher says it's important for supervisors to mentor without interfering. His boss in Memphis didn't call him with questions or concerns while he was in California; instead, his boss worked with Gonzales, and if she needed guidance, she could call him. "We were setting up Mary to have the experience, but I was there to back her up," Rencher says.

■ **Make good matches.** There has to be some similarity in the skills and knowledge required in both jobs if you want to keep both operations running, says Walt Abercrombie, vice president of IT at FedEx Express Operations.

■ **Pick motivated, self-reliant employees.** "It won't be successful if I or my [executive] counterparts have to spend a lot of time babysitting," Abercrombie says.

– MARY K. PRATT

Continued from page 36

application management for clearance operations, sales and marketing, human resources, finance/billing, supply chain services and transportation management.

Through the rotation, Carr says she gained a greater understanding of working in a regional office, where evening conference calls to accommodate U.S. work hours were the norm. She says she also saw "how difficult Roger's job is in clearance; almost every country over there has a different [customs] clearance, and he has to pull that together in one system."

Carr also had to improve her communication skills and adapt to cultural differences, even though English is the primary language in the Brussels office. "I'm used to the U.S. culture, where people give you pretty frank feedback. But in Europe, most people didn't give you frank feedback," she says, explaining that she learned to ask specific questions to get the information she needed.

> **"It was the best learning experience I had."**
>
> MARTHA CARR, MANAGING DIRECTOR OF SHIPMENT DATA CAPTURE

Such lessons helped Carr. She is now vice president of Latin America, Caribbean and FedEx Express IT solutions.

SELLING THE BENEFITS

Aaholm says no projects have gone down the tubes because of FedEx's rotation program, but that's not to suggest that these swaps are effortless.

She says that IT has had to work hard to win over some business partners who were concerned about having to build new relationships with rotated IT workers after they had established trust with their existing IT contacts.

And despite the successes to date, Aaholm says some managers are still concerned that their projects will slip if they rotate a key employee, so she has to "challenge" them to enable the rotations.

Aaholm says that when she pushed for employee rotations, she saw the program not only as a way to strengthen the skills of the participants, but also as a way to bring best practices, insights and fresh perspectives from one division to another.

And despite the challenges, workers are realizing that vision.

When Beth Galetti, an IT director based in Colorado Springs, was planning for her rotation two years ago, she was overseeing a team implementing a new system to handle some of FedEx's clearance business processes. The system worked technically, but it wasn't meeting all of the business unit's needs. Enter Terry Pavey, director of IT at FedEx Express in Canada. When he and Galetti traded jobs, he could see what Galetti couldn't — that her team was struggling with the project because it didn't have clearly defined requirements and strong buy-in from the business unit.

Galetti says that when she heard Pavey's assessment, "it was really one of those 'aha' moments." As a result, in consultation with Galetti, Pavey decided to get the IT team and the business partners together, air their differences and develop a plan to solve the problems bedeviling the project.

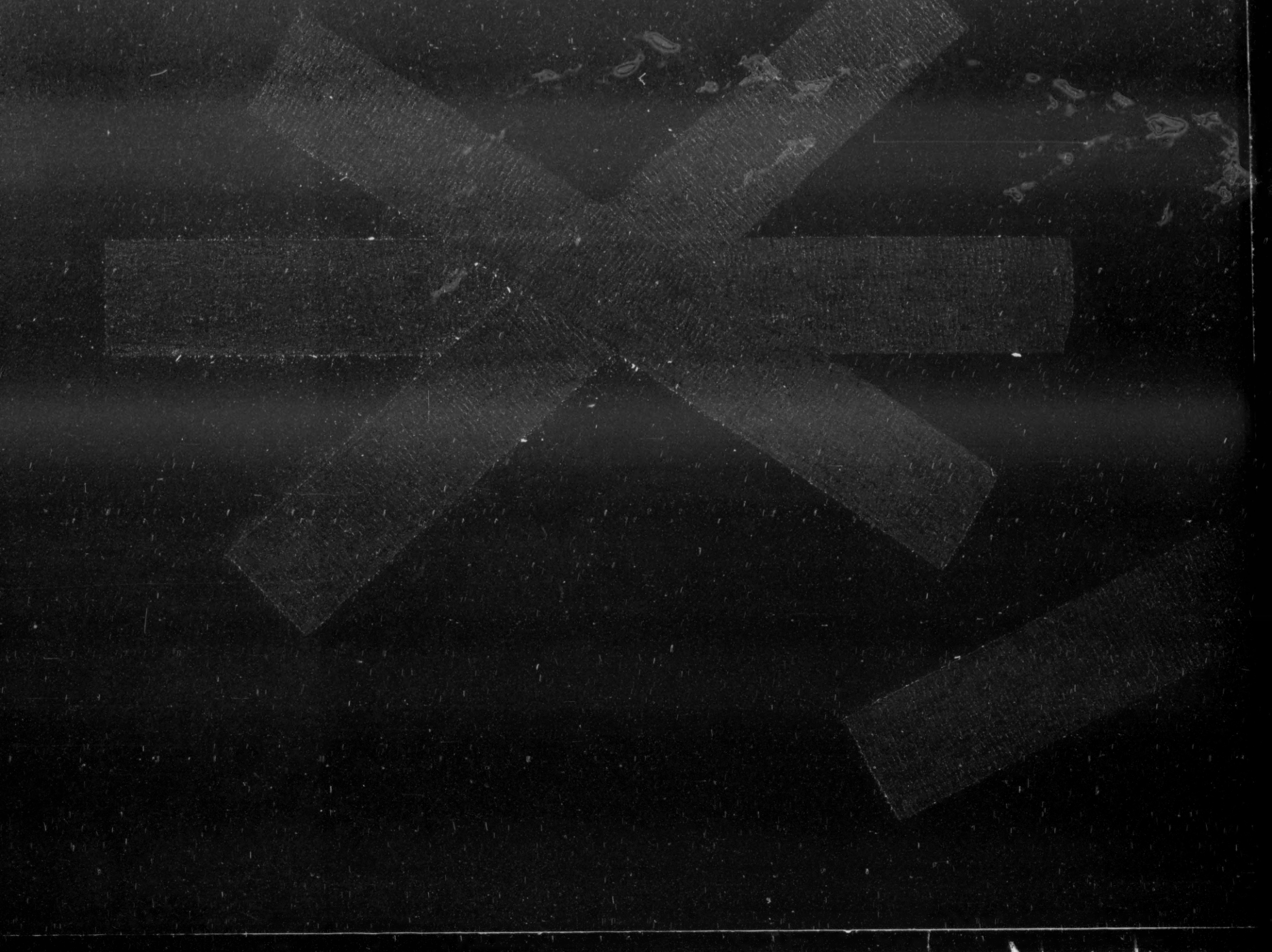
Pavey says Galetti's perspective had an effect on both him and his team. "One of my managers here in Canada who has been a manager for some time is a talented person, but [Galetti] found that this person was excelling in ways I didn't see," Pavey says. As a result, Pavey later decided to groom that individual as his successor.

Others agree that teams working for rotating managers can find new opportunities as a result of the program.

Walt Abercrombie, vice president of IT at FedEx Express Operations, was Carr's boss at the time of her rotation. He discussed the six-month swap with Carr's direct reports, explaining that her absence would give them a chance to demonstrate their leadership abilities.

"They got to walk a little more in the shoes of their boss. They attended meetings and interacted with senior management, increasing their visibility and giving them critical skills to make the next career move," Abercrombie says. "From my standpoint, it really helped strengthen the bench." ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*



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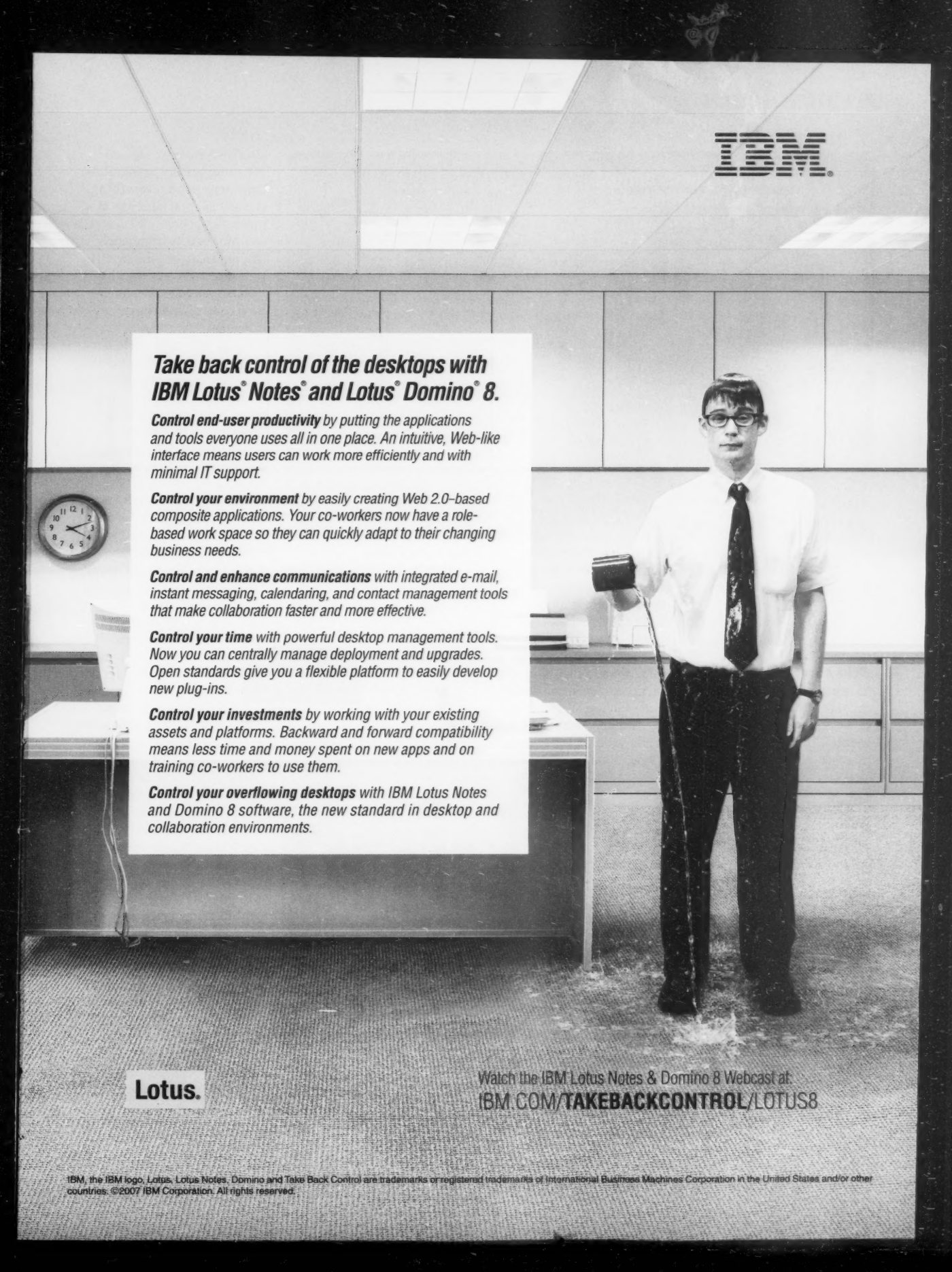
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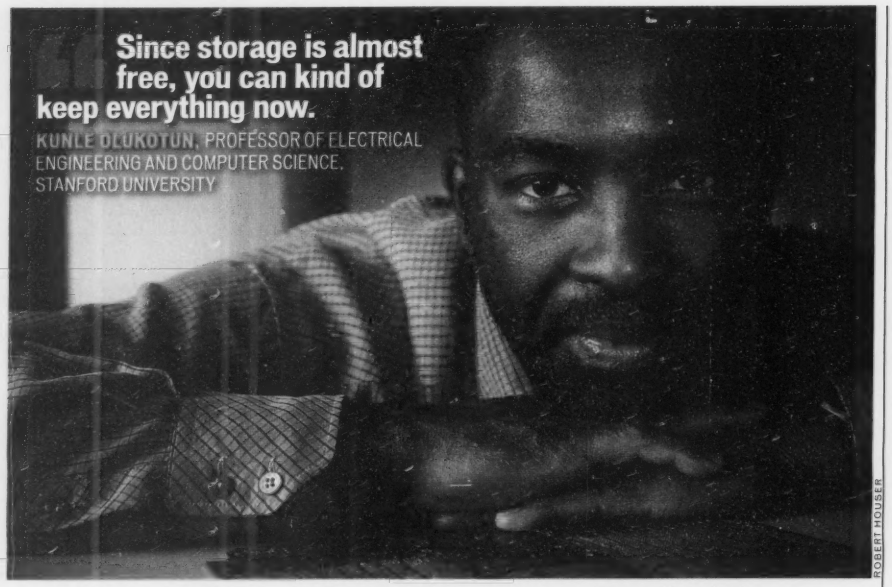
Since storage is almost free, you can kind of keep everything now.
KUNLE OLUKOTUN, PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, STANFORD UNIVERSITY
ROBERT HOUSER

Everything Must Stay!

The cost of disk storage is so low that the easiest thing for companies to do is to just hold on to all their data. And that opens up radical new possibilities. **By Gary Anthes**

A COMPANY today can buy a terabyte of enterprise-class disk storage for about $5,000. Eight years ago, it would have cost $200,000. Even the dramatic drop in the cost of processing, as predicted by Moore's Law, doesn't happen that fast.

The cost of storage is plummeting just in time for consumers to save all those digital photos, videos and songs they've developed an appetite for — and just in time for companies to comply with new regulations on document retention. And while they're at it, companies might as well hold on to all of their sales transactions and do some data mining and analysis.

But there's more going on here than a linear extrapolation of capabilities. Size matters, and users with big storage systems are likely to find themselves at a tipping point, empowered with fundamentally new capabilities.

"Since storage is almost free, you can kind of keep everything now," says Kunle Olukotun, a professor of electrical engineering and computer science at Stanford University. And "everything" is just what you need for an increasingly popular class of techniques called statistical machine learning, he says. As the name suggests, the idea is for a system to develop its own rules of logic by discovering patterns and relationships in data rather than having a programmer hard-code the rules in advance.

"There's this notion of using large amounts of data to do things that previously were done by clever algorithms — for example, language translation," says Olukotun. Traditionally, automated language translation has been accomplished via bilingual dictionaries and databases of linguistic rules. Google Inc. uses that method for translating among English, Spanish, German and French. But it's using machine learning in experimental translation engines for Arabic, Chinese and Russian.

"The Google guys said, 'Why don't we just throw massive amounts of data at it and look at lots of examples of the source and destination languages to come up with the rules?' " Olukotun says. "The more data you have, the better the rules get."

Access to vast amounts of data will put the solutions to some kinds of problems within reach, predicts Rick Rashid, senior vice president for research at Microsoft Corp. "We can think about analyzing huge amounts of epidemiological data to find solutions to medical problems, or think about traffic flow and urban planning and energy usage," he says. "There's a huge amount of data out there that could help us manage our society."

"Where there are large

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ONE BATTLEFIELD
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TRBA

Continued from page 40

stores of data, whether the company realizes it or not, there is a gold mine; there is free money," says Kevin Scott, vice president of engineering at AdMob Inc. in San Mateo, Calif. "Machine learning is going to be in wider and wider use as people begin to understand that it can fundamentally change the value proposition of your business."

Scott, who was recently a senior engineering manager at Google, says companies with large volumes of sales transaction data can use it for "collaborative filtering," a way to infer information about a shopper by comparing his transactions with those of similar users. It's how Amazon.com Inc. guesses that you might be persuaded to buy a book about digital photography when you order Adobe Photoshop.

"If your data volumes are low, that kind of thing is impossible," Scott says.

BUILDING STRUCTURE

The data growing most quickly in volume today is unstructured information, which can't be readily parsed and analyzed by automated means. More than 80% of all digital information in companies is in unstructured documents such as e-mail messages, images and the like, according to research firm IDC. That provides a "huge opportunity" for data mining via techniques akin to machine learning, Scott says.

For example, he says, a large company could pass many thousands of free-form performance reviews through algorithms that learn which data represents an employee name, an annual raise and so on. The systems would extract structure from unstructured information. Then a query tool could answer a question such as, "What is my average employee rating by geographic region each year for the past 10 years?" It would not be necessary to laboriously put the reviews into an indexed database.

Techniques such as machine learning and text mining won't be used widely until sometime well into the future, but many organizations already need to store all of their data for other purposes.

"The emergent property we are seeing is that companies are saving everything," says Richard Villars, an analyst at IDC. "We have this explosion in rich content, and it's not just consumers with digital phones and videos and music. It's hospitals moving to electronic records and X-rays and MRIs, and banks going to video surveillance, and then archiving that for years at a time."

In fact, some companies save individual pieces of data multiple times. Intellidyn Corp. in Hingham, Mass., has 70TB of data, covering things such as demographics, lifestyles, credit histories and property transactions, on 200 million adults in the U.S. CEO Peter Harvey says multiple credit agencies send files that have 90% overlap, but it is cheaper and easier to store the extra data than to purge it. And he says Intellidyn itself duplicates data by setting up private data marts for clients so they won't have to compete for the same piece of information in simultaneous queries.

Harvey says Intellidyn's storage will grow to 2 petabytes within two years as the company begins capturing and saving more transaction details. "So what?" he shrugs. "Storage is getting cheaper every day."

But while raw disk space may be, as Olukotun says, "almost free," one should not confuse a doubling in disk capacity with a doubling in performance from a disk system, Olukotun adds. "We've got this huge mismatch between the transfer bandwidth and latency of the disk and how much you can store on the disk," he says.

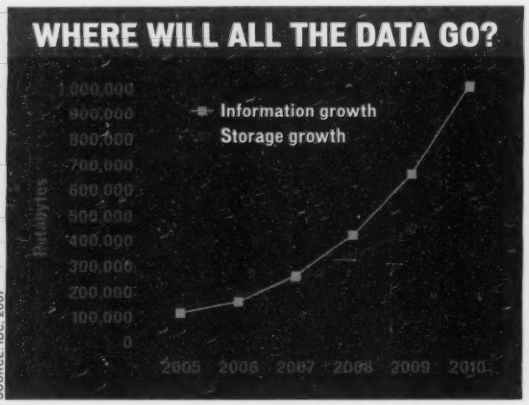
A traditional way to get data on and off a disk faster has been to increase the rotational speed of the disk, but mechanical limits cap that speed at about 15,000 rpm, says Villars. That could open the door to newer technologies, he says, such as persistent flash memory, which has no moving parts.

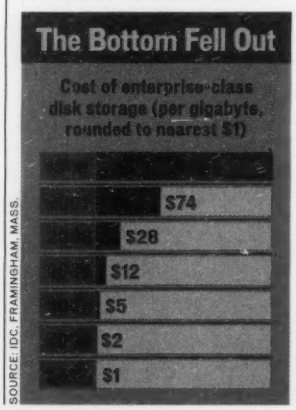
In the meantime, says AdMob's Scott, users will have to compensate for the transfer bandwidth bottleneck by being clever designers.

"We are entering an era where programmers will have to be fairly savvy about the performance of the programs they write," Scott says. "They won't be able to make silly decisions like, 'Oh, I have a ITB disk, so I will write a program to do a linear scan through 500GB of data to find an e-mail.' That is not going to work." ■

An Exabyte Here, An Exabyte There ...

Even as the cost of storage plummets and storage capacities soar, the amount of information that might be stored is growing still faster. According to IDC, in 2006, 161 exabytes (161 billion gigabytes) of digital information were created. That's 3 million times the information in all the books ever written. This annual information increment will grow from 161 exabytes to 988 exabytes – almost 1 zettabyte – by 2010, IDC says.





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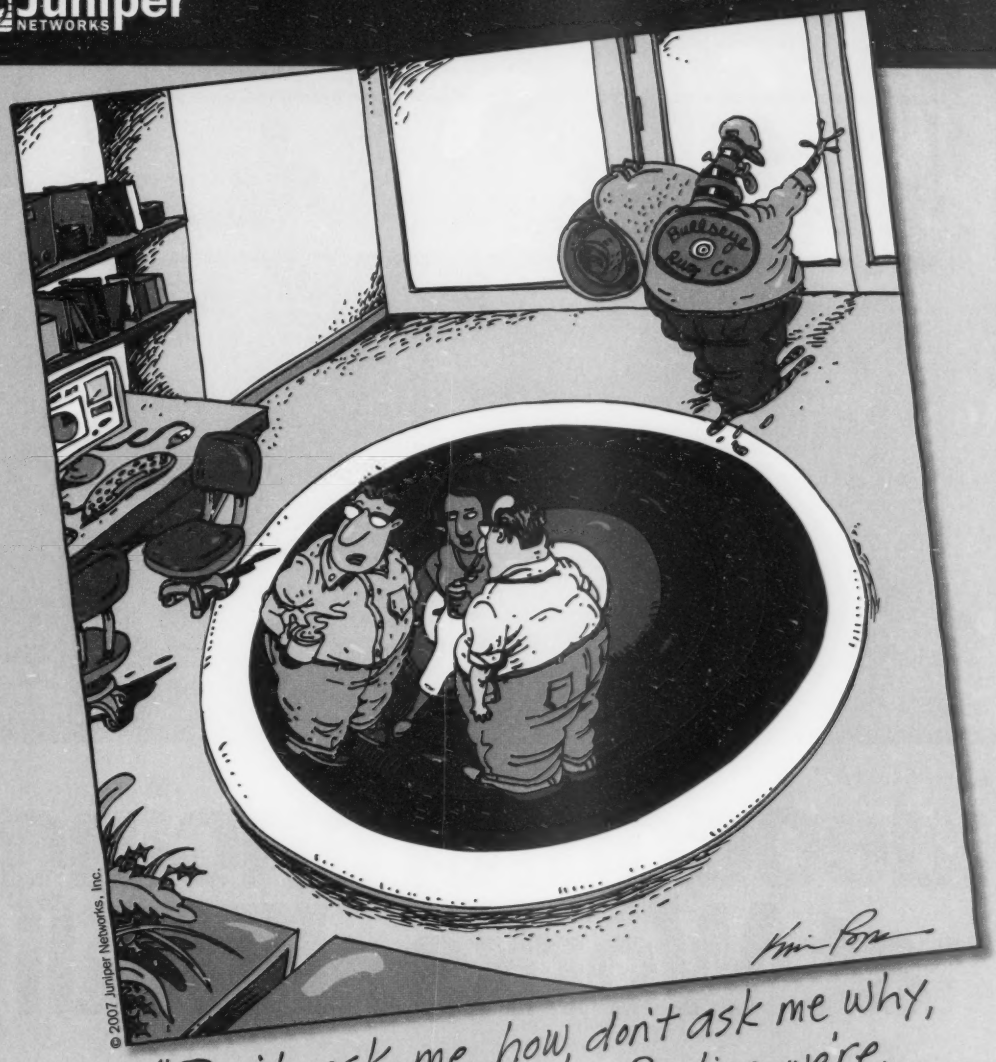

"Don't ask me how, don't ask me why, but I've got a funny feeling we're being targeted for a security breach."

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» Telepresence setups, like this one from Cisco, offer a more realistic experience than traditional videoconferencing.

Videoconferencing That Works. Finally!

It's still not cheap, but telepresence technology takes videoconferencing a giant step forward. And did we mention that it's really cool?

By John Dickinson

BACK IN THE 1960s, the old AT&T's Western Electric group demonstrated the Picturephone to a doubting world, and the world has remained doubtful ever since.

That's because videoconferncing products developed since then have remained expensive and unpredictable systems that usually deliver small, fuzzy, jerky video images, often uncoordinated with people's voices because of network latency and unreliability.

When the Internet came along, there was hope that webconferencing would fill the void, but it hasn't been very satisfactory, since it requires reserved bandwidth and separate telephone hookups for sound and relies on troublesome desktop technologies.

Of course, good old-fashioned telephone conference calls are reliable, but they just don't cut it with people who want to do business face to face.

With all that history, it's hard not to be skeptical when news comes of "telepresence," a video collaboration technology that is supposed to deliver high-definition images and stereophonic sound with enough realism to enable useful collaboration.

Telepresence technology is expensive, requires two or more dedicated conference rooms outfitted with specialized equipment (or, in some cases,

Continued on page 46

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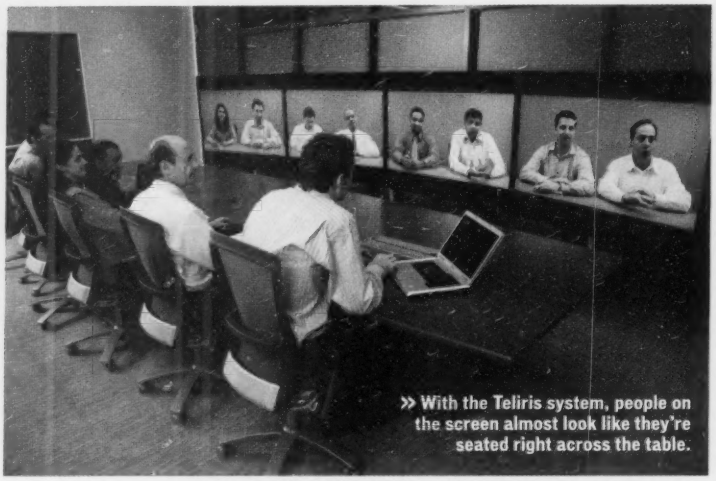

» With the Teliris system, people on the screen almost look like they're seated right across the table.

Seeing Is Believing

GIVEN THE lousy track record of video- and Web-based conferencing and collaboration technologies, I was very skeptical when a Teliris representative invited me to try her company's "breakthrough" telepresence-based VirtuaLive system.

"It's different," she promised, and she was right. I was impressed by the quality of the images and sound, but mostly by the realism that the system brought to the meeting. I was in San Francisco looking into the eyes of people in New York, and it felt like they were just across the table. They were the right size to be seated across that table, their voices seemed to come directly from their mouths, and they sounded natural – not at all artificial, as they would with so many remote sound systems.

My good impressions were reinforced when I got a look at Cisco's TelePresence system at the company's headquarters in San Jose. The system's modular configuration is quite functional and makes a virtual oval conference room table come alive. The Cisco equipment's gaze angle is not quite as natural as that of the Teliris system because the focus of the system is on the person sitting in the center, but otherwise it's just as realistic as Teliris VirtuaLive.

I later joined a conference using the Teliris WebConnect system from my home office. The required telephone hookup was as awkward as those of other Web-based systems, but the multiscreen image successfully mimicked the VirtuaLive conference room setup, with motion on the screens that was very nearly as smooth. The difference is that I was looking at a much smaller format.

– JOHN DICKINSON

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Continued from page 44

rooms that are custom-built to house the equipment) and often runs on proprietary network technology. But it's such a vast improvement over any previous video-based collaboration system that business users are signing up.

THE SETUP

Vendors as well known as Cisco Systems Inc., Polycom Inc. and Hewlett-Packard Co., and as little known as Teliris Ltd. and Codian Inc., are offering telepresence technology and services. The systems use a variety of technologies to deliver interactive video and sound signals that are realistic enough to make you almost believe you're sitting across the table from other conferees rather than across the world. Common to all of these systems is the use of high-definition television (HDTV) screens and cameras situated in such a way that participants sitting diagonally across from each other can see each other directly, without appearing to be off to the side somewhere looking straight ahead into nothingness. The odd angles you'd experience with ordinary videoconferencing technology virtually disappear with telepresence systems.

Telepresence configurations can use just one HDTV screen or as many as 16. Screens are positioned to be at eye level with seated conferees, and the images on the side-by-side screens are "stitched" together so that viewers feel as if they're looking at one very wide screen. Speakers are positioned so that the sound seems to emanate from the mouth of the person in the image, not from the center of the table or some random location in the room.

All of that equipment requires a dedicated conference room. Cisco TelePresence systems are modular, and that's currently the most common approach to telepresence, because the modules can be set up in any room large enough to house them. Cisco has even built custom tables that physically connect to the screen banks, which makes the room look a bit like it houses a circular conference table.

The Cisco systems come in fixed configurations with one or three screens, and the technology supports conferences between rooms with differing configurations.

New York-based Teliris' VirtuaLive systems are custom-designed for each room they will be used in, and they're tailored to reflect the purpose they will be used for. For example, some rooms are configured as conference rooms, and others as classrooms.

A typical Teliris installation for a small conference room includes three screens for participants to interact on and an additional screen for displaying

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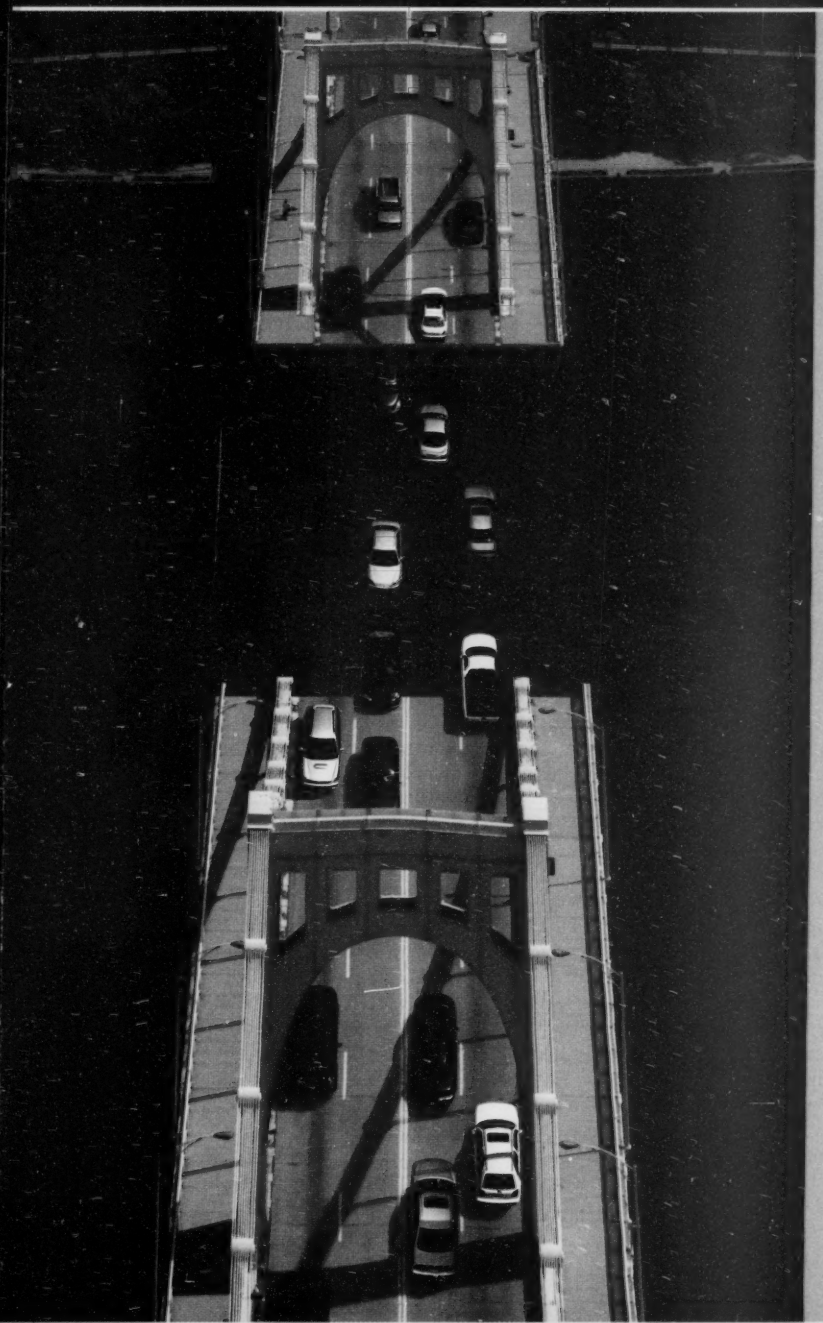
WHEN INFORMATION AVAILABILITY MATTERS



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Continued from page 46

the presentations used in the meetings. The screens are positioned across the conference table from the live participants.

Other VirtuaLive conference room configurations include many more screens, and meetings can occur between VirtuaLive environments with differing numbers of screens. A unique VirtuaLive feature allows for any number of Teliris-equipped conference rooms to participate in a single meeting. "We make it feel like a circle by vectoring the signals from the various rooms around a virtual table so that everyone sees each other naturally as if they were in the same room," says Teliris CEO Marc Trachtenberg.

NOT CHEAP

Once installed, telepresence systems are essentially free to operate, but it's the installation that'll get you. A single-screen Cisco TelePresence system costs $79,000 to install, and a three-screen system costs $299,000 per room, according to David Hsieh, Cisco's director of marketing management. And you have to multiply those figures by the number of rooms your telepresence network will have.

The costs of Teliris VirtuaLive systems are similar, with a single-screen room going for $60,000, and a four-screen room coming in at $250,000.

But analysts and users who have bought telepresence systems say they're worth the money. "The technology is really cool," says Forrester Research Inc. analyst Henry Dewing, "and it has the potential to fundamentally change how people view videoconferencing and how they do their work."

Food ingredient giant Tate & Lyle PLC has Teliris VirtuaLive rooms installed in its corporate headquarters in London and its U.S. headquarters in Decatur, Ill. CEO Iain Ferguson says it's easy to justify the cost. "A trip to Decatur costs us about $25,000 and three days of executive time," he says.

Jim Kittridge, Wachovia Corp.'s senior vice president and telepresence product manager, says the company picked the locations for its first two Cisco TelePresence installations by looking at travel patterns, which revealed that employees made about 15 trips a day between offices in Charlotte, N.C., and Richmond, Va. "The system is meeting the four objectives we had for it, which are to reduce expenses, increase collaboration among teams in different locations, increase employee engagement by keeping them off of planes, and fulfill Wachovia's corporate objective of reducing its environmental impact," he says.

"At Cisco, they've cut their corporate travel budget 6% by using their own TelePresence systems," says Dewing, who is familiar with Cisco's internal usage pattern. "That's a pretty big hit."

Kittridge says that Wachovia's TelePresence-equipped rooms are now used 45% of the time after just 60 days of operation. In contrast, use of traditional videoconferencing "has never reached 20%," he says.

"People are able to hold more meetings because they don't have the hassle of travel, and ad hoc meetings now happen that could never have happened if participants had to travel," Kittridge adds.

Networking has been the Achilles' heel of traditional videoconferncing, and it's still a concern with telepresence systems. If the video isn't smooth and perfectly coordinated with the audio, the performance devolves to being just like traditional videoconferencing.

So Teliris runs its systems over a dedicated proprietary network to achieve the high-bandwidth, low-latency transmissions that telepresence requires, says Trachtenberg. "Unlimited time on the network is part of the package customers get when they sign up for VirtuaLive," he adds.

Cisco uses a customer's own corporate network to carry its signal, according to Randy Harrell, the company's director of product marketing.

Making telepresence work requires a serious amount of bandwidth — as much as 45Mbit/sec. of capacity, according to Forrester's Dewing. "That makes the Teliris dedicated network approach attractive because you want to have very high reliability," he says.

But Kittridge says that reliability has not been a problem at Wachovia's sites. He reports 100% uptime for his company's Cisco installation.

So, how many companies are actually buying telepresence systems? Cisco's Harrell wouldn't share numbers, but Teliris claims that its customers added 50 new telepresence rooms in the second quarter of this year, and it now has customer installations in 20 countries.

According to Dewing, the potential of telepresence could be large once the price comes down. "It'll never get to $10,000 per room," he says, but as standards emerge, "it will come down a lot." ■

Dickinson *has worked in IT positions ranging from systems analyst and software engineer to editor, writer, critic and industry analyst.*

Sharing the Vision

IN JUNE, Teliris launched Telepresence Gateway, which it says is the first product to support interoperation between competing telepresence systems. Gateway now enables Teliris VirtuaLive systems to connect to systems from Polycom and Tandberg ASA, and Teliris plans to expand the list of vendors whose systems it supports to include Cisco, HP and others.

Gateway works with traditional videoconferencing technologies, such as those offered by Polycom, and with webconferencing technologies such as Cisco's WebEx and Microsoft Corp.'s LiveMeeting.

Teliris also offers WebConnect, a Web-based telepresence product that lets people join meetings even if they can't be at a VirtuaLive-equipped site.

Forrester analyst Henry Dewing notes that you don't need expensive telepresence technology for everyday telecommuters, but linking workers to telepresence systems via systems like WebConnect can improve communication.

– JOHN DICKINSON

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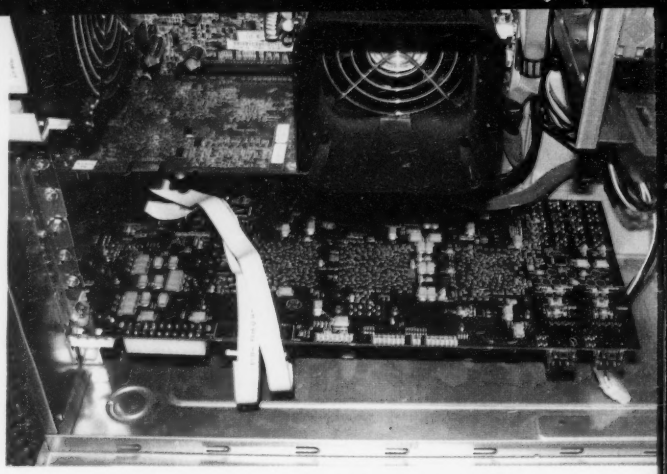
Desktop Power Play

Coming soon: A supercomputer for the rest of us. By Ben Ames



» A prototype of the Explicit Multi-Threading computer.

WHAT IF your desktop computer could run 100 times faster than a PC and were simple enough for a high school student to program?

That's not an idle question. Researchers at the University of Maryland have built a prototype of a "desktop supercomputer" that can do just that.

The new computer is at least three years from reaching commercial markets, but it could have a big effect in industries that process large loads of data. They include the pharmaceutical, aerospace, military and entertainment industries, for applications such as drug modeling, computer-aided design and digital content creation.

The Explicit Multi-Threading (XMT) computer combines the decades-old philosophy of using parallel computing algorithms with the huge number of transistors in modern processors.

The machine uses three field-programmable gate array chips from Xilinx Inc. to represent a network of 64 ARM processors that control dozens of threads of simultaneous computation, says Uzi Vishkin, a professor at the A. James Clark School of Engineering who built the machine with his graduate students.

The team is now trying to shrink the prototype, a license-plate-size board running at 75 MHz, down to a fingernail-size version running between 1 GHz and 2 GHz.

Team members took the first step toward that goal this summer by commissioning IBM to manufacture a CMOS silicon application-specific integrated circuit (ASIC) with an on-chip data interconnect network. The venture is funded with a grant from the U.S. Department of Defense, Vishkin says.

A KID COULD DO IT

Even if they succeed in building a smaller version of the prototype, the researchers will face the challenge of teaching programmers how to write software for a multithreaded system.

Many commercial software companies are already puzzling over a similar problem today as they try to adapt to the latest dual- and quad-core processors from Intel Corp. and Advanced Micro Devices Inc.

However, Vishkin says his system will be easier to program than applications for commercial multicore chips because the XMT algorithms appear to the operating system to be a single thread. "If you build it in a way that people cannot program it, it remains in the ivory tower of theory," he says.

To prove his point, before the end of this year, Vishkin is planning to teach a class of high school students how to program the XMT using a version of the C programming language. He will teach college students to program the prototype in the first quarter of 2008. ■

Ames *is a reporter for the IDG News Service. Contact him at Ben_Ames@idg.com.*

USER WISH LIST

A supercomputer would be a godsend for students and artists who rely on computers to process huge amounts of data in the creation of high-resolution digital pictures and movies, says Jon Stiles, director of campus technology at the Rocky Mountain College of Art and Design in Denver.

"That would absolutely revolutionize our animation department," Stiles says, adding that currently, students at the college often have to wait for nine or 10 hours while their PCs process the data in a new design.

"We're constantly looking for ways to eliminate bottlenecks in production," he says.

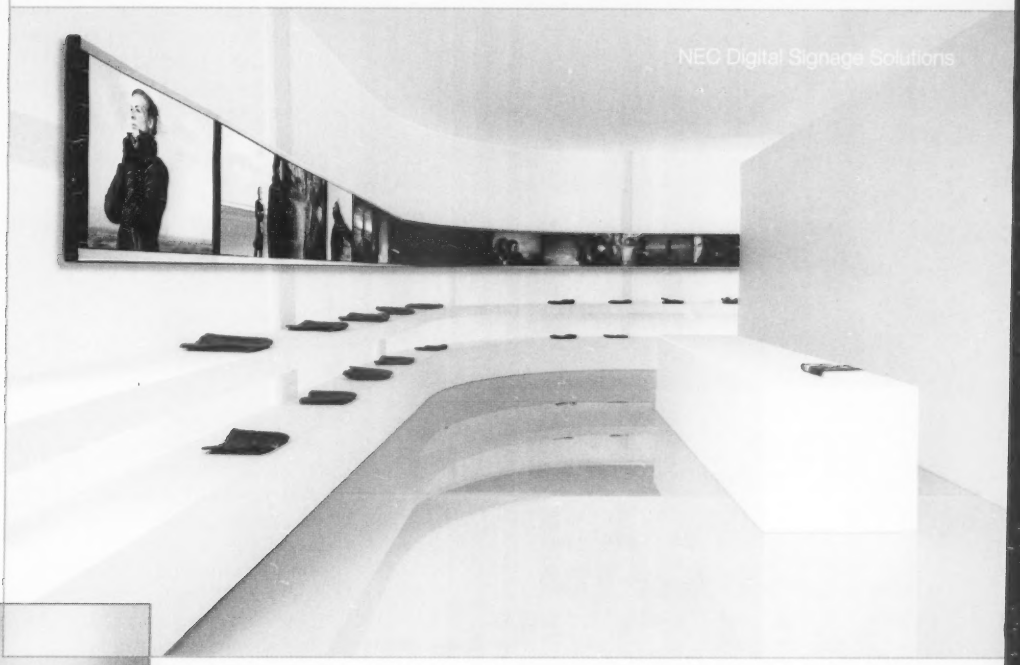
Stiles warns, however, that a parallel supercomputer would have to meet three conditions before the college could use it. It would have to offer vast data storage, be capable of running standard commercial software such as Adobe Systems Inc.'s Creative Suite 3 and consume the same amount of energy as current computers.

If those conditions were met, Stiles says, "my campus IT support manager would do back flips."

Energy use shouldn't be a problem, says Uzi Vishkin, a professor at the A. James Clark School of Engineering.

"Based on back-of-the-envelope calculations, we believe that each cluster we have will consume not much more power than a standard core," he says. "So we will be competitive on power draw with the same generation of multicore chips."

– BEN AMES



What happens when a technological achievement also happens to be a fashion statement?

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GETTY IMAGES

Lies, Damn Lies and Paid Polling

The security world according to vendor surveys. By Jaikumar Vijayan

ONE SURVEY describes USB devices as the leading security threat IT managers face. Another talks about zero-day attacks emerging as the biggest driver of security budgets. A third says a majority of consumers polled want their banks to implement risk-based authentication mechanisms.

What's the common thread tying together these and similar surveys? They were all conducted by IT security vendors, and each purports to highlight some key security challenge IT managers confront — one that the vendor's products are designed to resolve.

Does that make the surveys untrustworthy? That depends on whom you ask. "The fact that a survey is from a vendor is absolutely a red flag," says Sebastian Holst, senior vice president of sales and marketing at PreEmptive Solutions LLC in Mayfield Village, Ohio. But good vendor surveys are very transparent on methodology, demographics, questions asked and filters used to vet inconsistent responses, making them a valuable source of information for IT users, he says.

Matt Kesner disagrees. The chief technology officer at Fenwick & West LLP, a Mountain View, Calif.-based law firm, calls most vendor surveys "info-spam." It would be "a huge surprise" if a vendor published a survey that was less than self-serving, he says.

CONSIDER THE SURVEY

A lot depends on the care that is taken in conducting the survey, says Pete Lindstrom, an analyst at Midvale Utah-based Burton Group. "You need to see the survey instrument to see if it is biased," Lindstrom says, adding that definitions are often unclear and the analysis may not completely reflect the numbers.

"In general, I am a fan of surveys, but the devil is in the details," he says. "The nondiscriminating person can be easily swayed by these survey results. That is often the reason vendors use them. But they can provide good information if the methodology is appropriate and the survey instrument is available."

Vendors say the surveys help shape product strategy and educate customers. "We want to make sure that we understand the market correctly," says Marc Gaffan, director of product marketing at RSA Security Inc., the security division of EMC Corp. "We want to be able to see in what direction we need to move from a product perspective. PR is just a byproduct."

Don Leatham, director of solutions and strategies at PatchLink Corp., says IT users are smart, sophisticated consumers. "Our customers are very well versed in vendorspeak and vendor spin," he says. But they're looking for information from all sorts of sources, and they "like the validation" of their peers through vendor surveys, he says.

David Jordan, chief information security officer for Virginia's Arlington County, says vendor surveys can provide useful information to those who are new to the security field. As for vendor surveys highlighting the importance of their own products, "that's just American business," he says. "Everyone does it." ■

Strategy or Spin?

■ **A majority of individuals surveyed by Centennial Software Ltd. said USB memory sticks and similar portable storage devices were their No. 1 security concern. Centennial sells a product that locks down unauthorized file transfers to portable storage devices.**

■ **About 91% of respondents to an RSA survey said they wanted stronger authentication methods for online financial transactions. RSA sells strong authentication products.**

■ **Two-thirds of respondents to a PatchLink CIO survey anticipated an increase in zero-day threats this year. PatchLink sells software to help companies deal with zero-day threats.**

■ **More than two-thirds of respondents to a survey by PreEmptive Solutions don't having controls in place to protect against illegal reverse engineering of their applications. PreEmptive sells products for source code protection.**

– JAIKUMAR VIJAYAN

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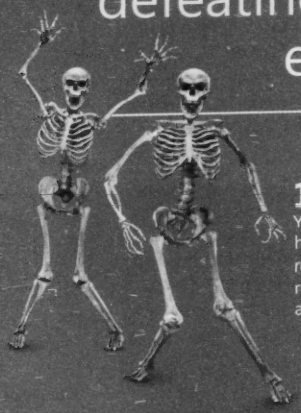
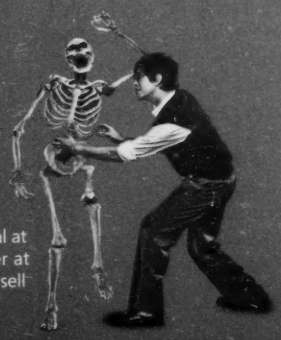


1. Pinch yourself.
You're being chased down a long, dark hall. Only the hall leads to the lunch room and it's no nightmare; Skeletons really have attacked your office. Put aside fear and face the task at hand.

2. Sneak up and scare them.
Skeletons love scaring people, but why? Anyone that obsessed with scaring others is probably scared themselves. But of what? A psychologist might say the Skeletons fear exposure, for who is more exposed? Any psychologists out there?

3. Use nondairy creamer.
Drinking milk builds strong bones. And a good calcium supplement is a must for women over 50, when the risk of osteoporosis can increase dramatically. Deny the Skeletons this key nutrient, you'll see them weaken and crumble.

4. Put on a show.
It's a classic scene. Hamlet, the melancholy Dane, finds the skull of Yorick in the graveyard, and muses on the inevitability of death. This is a big role for a Skeleton—use it as bait. Offer him the part, and simply keep the prop.



5. Destroy the dark crystal.
What unholy force animates the Skeletons? Has the fabled dark crystal of Fabrikam fallen into the hands of an enemy? Find the crystal at all costs, fling it into the fiery river at the heart of Bone Mountain, then sell the movie rights.

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Road Map Meeting Goes Sideways

When **the CIO** wants to focus on **network segmentation,** it's probably best to go along. Besides, **he's right.**

Trouble Ticket

ISSUE: It's time to come up with a comprehensive security road map, and the CIO wants to control the agenda.

ACTION PLAN: Go along to get along, and get back on track later.

ONE OF my strategic objectives for the year is something I've actually been looking forward to doing: coming up with a comprehensive security road map. When I've done this in the past, it's been kind of fun. I like to get some people in a room, order pizza and start brainstorming.

If nothing else, this exercise is a good way to identify a wish list and put some dollar figures next to each item. Sometimes it helps you see where the desirable and the doable intersect. To make this intersection easier to spot, I've started using a software package from San Francisco-based Mindjet that makes it easy to capture the ideas that emerge in the meeting and then organize them into a flow tree. It's a helpful tool for prioritizing and making all costs evident.

As it turned out, though, there wasn't any great need to prioritize what came out of our initial meeting.

That's because the CIO made it clear right away that he wanted us to focus on network segmentation. I had kept this first meeting small, inviting only the CIO, the senior director for IT and several managers and architects within IT. I had wanted to be able to control the meeting, and I tried to do that by suggesting that network segmentation was indeed one element of a comprehensive security road map. But the CIO wouldn't budge. Rather than spending the entire hour negotiating, I followed his course.

Happily, what ensued was a worthwhile discussion about something that we desperately need. First, I narrowed the discussion even further, to the rule of least privilege. I've talked about this before, and I believe it's the most important concept in security information: You should never give anyone or anything on your network access to anything that they don't need to do their jobs. "Anyone" can be an individual or a group of people, and "anything" can be a server or an application, for instance — after all, hardware and software have jobs to do, too, but there's no reason to give them access to any part of the network that doesn't relate to those jobs. It wasn't difficult to get the group to agree to this basic philosophy.

■ Happily, what ensued was a very worthwhile discussion about something that we desperately need.

VALIDATION PATHS

Next up for discussion: What should happen when employees attach their PCs to the network? We decided that we want to ensure that each PC is a valid company resource. We also want to ensure that each PC meets our standards in terms of antivirus protection, patches and applications. And we want employees to be able to do their jobs.

For validation, we're going to look at network admission control (NAC) as well as Dynamic Host Configuration Protocol (DHCP) and media access control (MAC), which would allow us to use existing infrastructure to segment the desktop network. DHCP is the mechanism by which an IP address is dynamically assigned to a PC when it is attached to a network. This requires you to first identify valid PCs by registering each one's unique MAC address in the DHCP server. When the PC is attached to the network, it transmits its MAC address to the DHCP server, which should be able to recognize all valid MAC addresses and then assign an IP address from within the desktop network range. NAC works somewhat differently but produces the same result.

In our next meeting, we will move on to other elements of a comprehensive network segmentation project, turning our attention to the data center, the engineering labs and the manufacturing facilities. Once we've worked all that out, I can then plug it all into my comprehensive overall security road map and get back on track. ■

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

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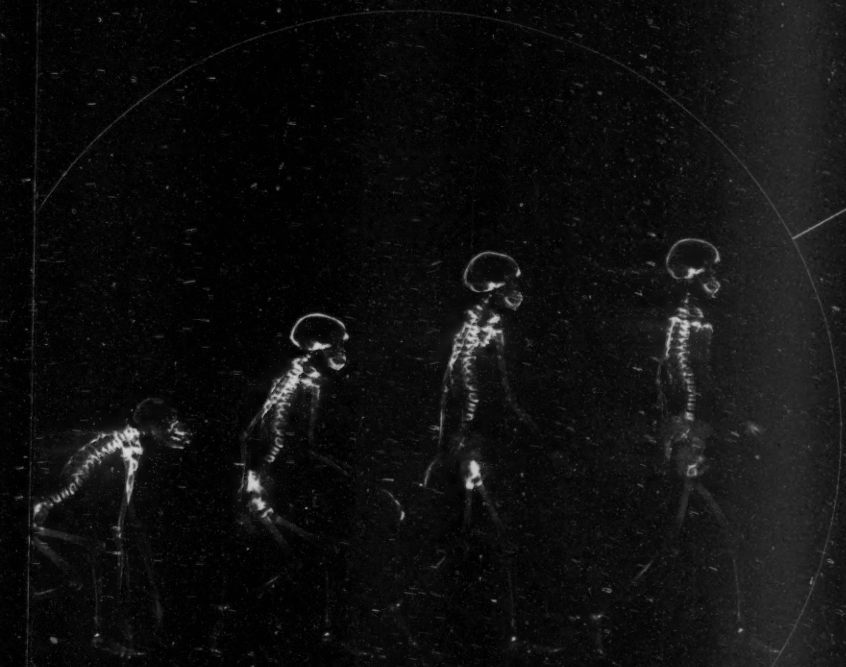

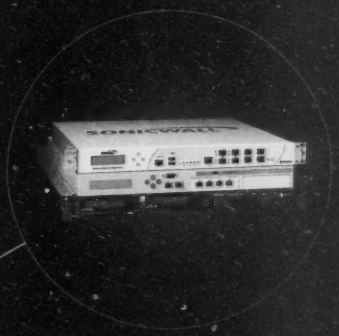

SO MUCH FOR THE STATUS QUO.

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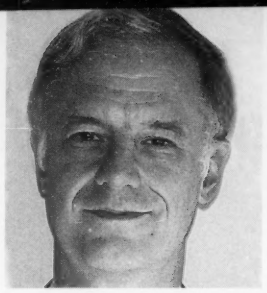
PROTECTION AT THE SPEED OF BUSINESS

■ OPINION

Bart Perkins

Ten Energy Savers



COMPANIES IN the U.S. spend as much as 10% of their total IT budgets on power and cooling, according to Gartner Inc. Over the past year, virtually every IT publication has recommended ways to reduce energy consumption by migrating to green buildings and green data centers. Most articles focus on basic approaches, including virtualizing servers, migrating to blade servers and cleaning up the space beneath the raised floor.

IT organizations can reduce energy costs in additional ways:

Raise corporate awareness of energy costs. Few people inside or outside the IT organization understand the amount of energy consumed by IT systems. Garner support for energy reduction programs by quantifying and communicating these energy costs.

Focus on total system energy. Power supplies, memory and monitors are all becoming more energy-efficient. Even cooling-fan impellers have been redesigned for more efficient air or liquid movement. In addition, an energy-efficient operating system helps minimize the total energy consumed and can automatically turn off unused components.

Model data center power and cooling. New modeling tools from Aperture and APC recommend equipment placement that minimizes power and air conditioning requirements. They use sensors that monitor actual power consumption and airflow to suggest additional improvements.

Consider utility rates when locating server centers. Google and HSBC are constructing new server centers to take advantage of hydroelectric power from Niagara Falls and Oregon's Columbia River. Other companies are moving to Kentucky and Wyoming for lower-cost power.

Install modular, scalable uninterruptible power supplies. Older UPS systems are among the biggest power wasters in data centers, consuming more energy than the load requires. Newer systems reduce unnecessary energy consumption by enabling data centers to add capacity in much smaller increments, more closely matching consumption to actual load requirements.

■ Few people inside or outside the IT organization understand the amount of energy consumed by IT systems.

Upgrade cooling. Cooling systems from Liebert and APC (in-row or closely coupled) reduce costs by capturing and neutralizing hot air near its creation point. Data centers configured with hot and cold aisles reduce the amount of energy required for cooling.

Use energy-efficient lighting. An LED bulb consumes a quarter of an incandescent bulb's electricity, without the harsh light of a florescent bulb. The cost of an LED is comparatively high, but the price is falling rapidly.

Reduce data volumes. Remind your staff to regularly purge unused files, remove duplicates and compress existing files. An enormous amount of disk space is taken up by the data detritus that accumulates over time. Investigate automatic archiving systems.

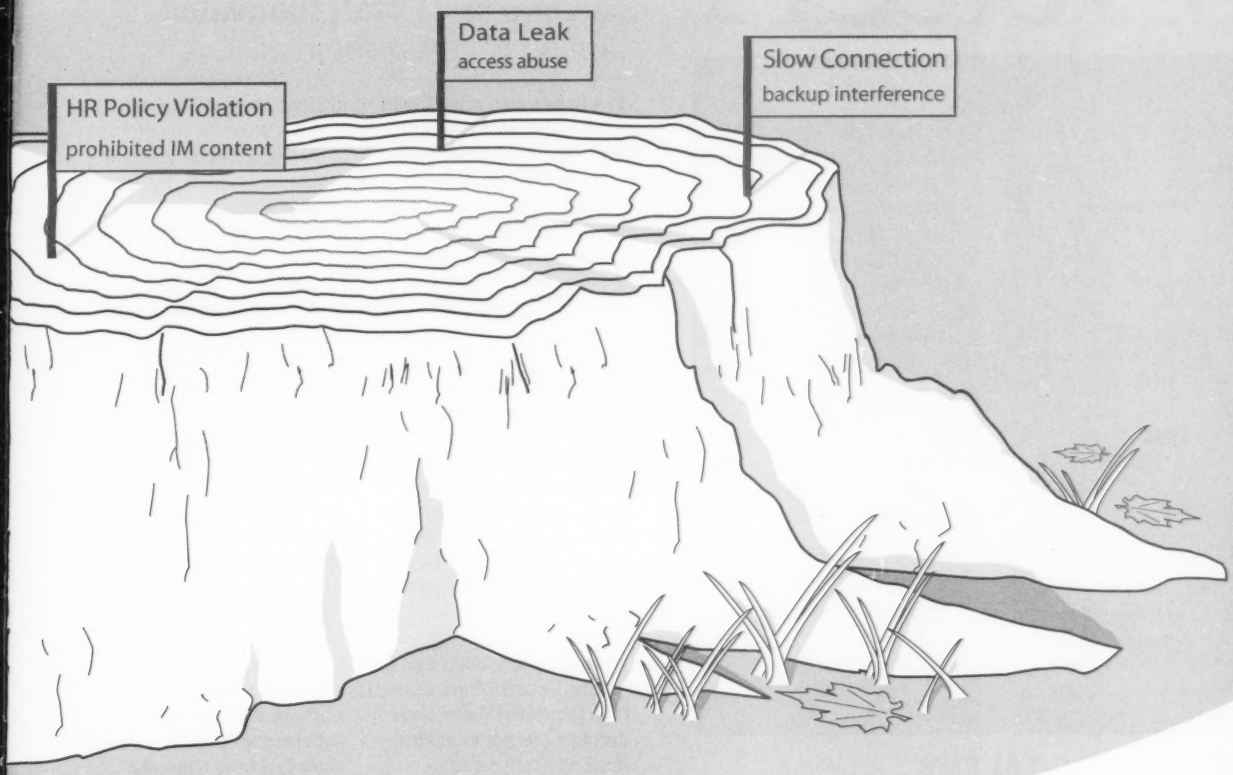
Take advantage of utility rebates and tax credits. The Energy Policy Act of 2005 expanded the business energy tax credit for solar and geothermal energy to include fuel cells, microturbines and hybrid solar lighting systems. In addition, some utility companies offer rebates for reducing energy use, particularly during periods of heavy consumption, in order to delay construction of new power-generation facilities.

Follow guidelines of green associations. A number of U.S. and EU groups, such as The Green Grid, promote green computing and green facilities. Investigate their recommendations.

Many companies are moving the responsibility for energy costs out of corporate budgets and into IT. But IT budgets are finite, and energy costs are on the rise. Reduce your energy costs so you won't have to reduce your head count. ■

Perkins *is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.*

Know your network roots.



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Career Watch

How to Get That Raise

Jim Camp, writing in *CIO* magazine on June 27, offered "10 Mistakes to Avoid When Negotiating a Raise." Be sure to check it out. Highlighted here is what he had to say about mistake No. 1:

Don't tell your employer it's time for you to get a raise.

Instead, start by inviting your boss to say no. Tell her you're comfortable with a "no" answer and that you want her to be comfortable saying no. This puts her at ease and clears the air. Watch how her ears perk up and her body language relaxes. "OK," she's thinking, "I have permission to say no. Now let's hear what this employee has to say."

Let me be very clear here: The "no" principle is not about intransigence. On the contrary, it's about openness and honesty. The invitation to say no tells your boss that you're an adult and you're capable of talking rationally with her. "No" allows everyone involved to put away the need to be right, to be the smartest, strongest and toughest. It prevents you from making weak and, worse, bad decisions because of your need to feel safe and secure and liked by the other side. "No" says to everyone at the table, "Let's bury any rush to judgment born of the getting-to-yes mentality." "No" says, "Relax, I'm not trying to fleece you, and you're not about to fleece me."

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FOLLOW THE TALENT

In a June report from Forrester Research Inc. called "Recruiting IT Talent: Adjusting to a Hot Market," analyst Samuel Bright urges CIOs to respond to the tightening IT skills market by broadening their recruiting pool. He also notes that cultural fit and the reputation of your IT group may be as important as salary in luring these new targets. Rather than focusing only on corporate IT professionals, he suggests that CIOs fish in three underused talent pools:

■ College graduates and student interns. This talent stream remains largely untapped because of an unwillingness to budget for training, a lack of clear career paths for interns and unrealistic expectations on both sides – all solvable problems.

■ IT professionals. IT groups seldom look into the feasibility of hiring IT professionals from off the beaten path such as college faculty or researchers, contractors, consultants, vendor employees and outsourcers.

■ Business professionals. Superusers and "shadow" IT people in the business who develop business applications outside the IT organization can be found and approached through IT colleagues who interact with them.

– KATHLEEN MELYMUKA

■ Q&A

Tony Young

Having been through **three acquisitions**, Informatica's CFO talks about the **career effects of mergers** and acquisitions and keeping an **IT staff motivated** during M&A upheaval.

How have these acquisitions affected you professionally? My main concern was how to manage my team. As an IT company, we build road maps out nine to 12 months. When an M&A occurs, how do you revisit that and adjust what's on your plate? These aren't trivial work efforts for our teams.

How do you keep your troops motivated? Part of the trick is making sure everyone connects what they're doing in IT to how we run our business. If you can have this connection, people will understand the M&A event, how it impacts the company and how it benefits them in a positive way.

What are some steps that IT managers or staffers should take to protect themselves during a merger or acquisition? Some of it is a matter of perspective, how you handle the development of your people, and the capabilities you develop during your career. If you lose your job during an M&A, that's outside your control. So we focus on growing our people as best as possible so they're very marketable. Fortunately, we have very low turnover in a hot Silicon Valley market.

How do you keep turnover low? One of the things we do is all of our managers engage in certain practices internally. One is a simple form that has 18 motivating factors that we rate for each employee. Some employees want to become CIOs. Some want stability. Some want more pay. When we focus on their development plans, we focus on what we can do to help them meet their needs.

What are some of the most overlooked things that IT workers should consider with respect to their career choices during a merger or acquisition? If you haven't thought about your career before an M&A event occurs, it's too late.

– THOMAS HOFFMAN

Driven to Distraction

What managers say is most distracting:		And how they cope:	
E-mail	67%	Get to work early	46%
Crisis of the day	42%	Focus	41%
Personal interruptions	31%	Close the door	37%
Changing priorities	30%	Work at home	37%
		Stay at work late	37%

NOTE: MULTIPLE RESPONSES ALLOWED
BASE: GLOBAL SURVEY OF 208 SENIOR EXECUTIVES AND MANAGERS, JUNE 2007
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PAGE COMPILED BY JAMIE ECKLE.

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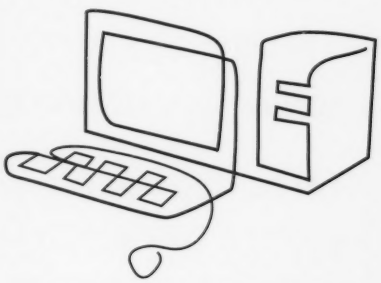

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See V. James Onalfo

As CIO and Deputy Commissioner of the NYPD, Jim has received six awards for the Real Time Crime Center, including the Top Government Global award. Jim accepted the Computerworld Honors Program's 21st Century Achievement Award in 2006, and was recently recognized as one of Computerworld's Premier 100 IT Leaders for 2007.

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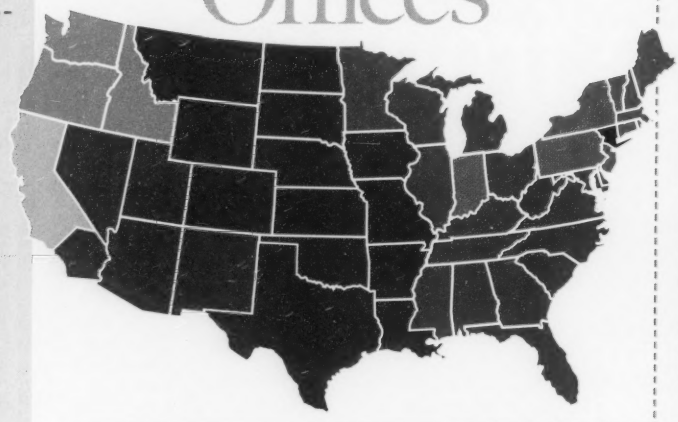

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Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Picky, Picky

Support pilot fish gets a call from the purchasing manager, who says he's trying to invoice a purchase order and the ERP program won't let him proceed. "The error message says the invoice is for $12,050, and this doesn't match the line total on the P.O., which is $12,040," says fish. "I ask him which figure is correct, and he replies that he doesn't know. I remind him that he is the purchasing manager. He says, 'I guess I'll have to add up the items on the P.O.' While I'm talking with him, he tells me $12,040 is correct. Once he makes the change, the invoice process completes, and the program accepts it."

Clicky, Clicky

One of this pilot fish's jobs is unblocking Web sites that the filtering software miscategorizes, and when a user asks him to open up a particular URL, the fish does so. "Then I test it to make sure it works," fish says. "But I can't get to it. Instead, I get a Web page saying that the domain is owned by so-and-so – there's no real Web site. I ask the user where he got this URL. His reply: 'It keeps popping up when I go to Web pages, so I decided to click on it.' "

That's in Furlongs Per Fortnight

This company rotates managers every 18 months, so sometimes new IT managers come with no IT background – or clue. "In the weekly departmental meeting, one of the server admins began discussing power available to the server room," says a pilot fish on the scene. "We're at max capacity and must decommission one server in order to deploy another. When he mentioned that he decommissioned three servers, the IT manager asked how much power will become available. Struggling to come up with an explanation that the IT manager would actually understand, he gave up, held his hands about two feet apart and said, 'About this much.' Sadly, the IT manager took this as a valid unit of measurement and moved on."

Anyone? Anyone?

Pilot fish is doing a custom software deployment, and he's got strict orders to have some user workstations running before week's end to test the application. "So I install the app and then send an e-mail to the manager to have him test it," says fish. "I get an out-of-office message back saying he's at the corporate IT conference all week and to contact Wally if I need something before the weekend. Since I start full deployment next week and *do* need something before the weekend, I dutifully forward the original e-mail to Wally – and get an out-of-office reply that begins, 'I'm at the corporate IT conference all week. . . . ' "

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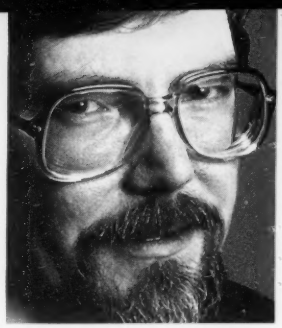

Microsoft's Delight

I DON'T MIND a little cynicism — it's a natural and only mildly toxic byproduct of paying attention. So last week, when Microsoft's Office Open XML file format was rejected as an international standard, I wasn't bothered that Microsoft said it was "extremely delighted" by the result.

Some observers called that phrase "spin." Me, I trust it was just ordinary Microsoft cynicism.

Or is it optimism? Sure, Microsoft's proposed standard was rejected, which means some organizations — especially governments — won't want to use OOXML as their document standard.

But OOXML didn't lose by a lot, right? And in February, Microsoft will get one final chance to fix up the problems and get OOXML OK'd. And then we can all happily use it, because it will be a formal international standard — right?

Hold that thought.

Now consider this from Brian Jones, a Microsoft manager who has worked on OOXML for six years. In July, Jones was asked on his blog whether Microsoft would actually commit to conform to an officially standardized OOXML. His response:

"It's hard for Microsoft to commit to what comes out of Ecma [the European standards group that has already OK'd OOXML] in the coming years, because we don't know what direction they will take the formats. We'll of course stay active and propose changes based on where we want to go with Office 14. At the end of the day, though, the other Ecma members could decide to take the spec in a completely different direction. . . . Since it's not guaranteed, it would be hard for us to make any sort of official statement."

Now *that's* cynical. After all this work to make OOXML a formal, independent standard — a standard created and promoted by Microsoft, remember — Microsoft won't agree to follow it.

Sorta puts Microsoft's giddy public optimism in perspective, doesn't it?

To at least some people at Microsoft, this isn't about meeting the needs of customers who want a stable, solid, vendor-neutral format for storing and managing documents. It's just another skirmish with the open-source crowd and rivals like IBM, and all that matters is winning.

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It's unfortunate. Most users of Microsoft Office don't care about this whole standards brouhaha — they just use Office because it's Office.

But to organizations that need a well-defined, XML-based format to manage huge numbers of documents that may be archived for decades, this is important.

These customers want a standard that Microsoft will promise to use — even if it's not convenient for the company's plans.

They want a standard that Microsoft won't arbitrarily change in order to lock them in or block competitors out.

They want a standard that third-party software makers and in-house programmers can use to build tools for managing documents, searching contents, extracting data and converting text.

Today, OOXML can't meet those requirements. With work — a lot of work — it might.

But OOXML wasn't designed to be an open, vendor-neutral standard. Trying to force-fit it into that mold by February will make it either brittle or useless, neither of which will help customers who want a standard document format.

OOXML needs to be worked over carefully, over time, with an eye to meeting customers' needs.

Doing that wouldn't cost Microsoft any business — just some time, some bragging rights and a little control.

Whether Microsoft will do it — abandon this fast-track process, hunker down to make OOXML right, work with its rivals — will go a long way to tell us how much Microsoft deserves our trust when it comes to industry standards.

And to tell us just how deep Microsoft's cynicism runs. ■

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